This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

1837
ARTES
VERITAS
SCIENTIA
LIBRARY OF THE
UNIVERSITY OF MICHIGAN
E PLURIBUS UNUM
TUEBOR
SI QUAERIS PENINSULAM AMOENAM
CIRCUMSPICE

TN
805
.A6
A58a
1900

GEOLOGICAL SURVEY, 1873-

OF

ALABAMA,

EUGENE ALLEN SMITH, Ph. D., State Geologist.

REPORT

ON THE

WARRIOR COAL BASIN

WITH FIFTY FIGURES IN TEXT, SEVEN
PLATES AND A

MAP

BY

HENRY McCALLEY,
Assistant State Geologist.

THE VANCE PRINTING CO., STATE PRINTERS AND BINDERS,
JACKSONVILLE, FLA.
1900.

To His Excellency,

Governor Joseph F. Johnston,

DEAR SIR:—I have the honor to submit herewith the Report on the Warrior Coal Basin of Alabama by Henry McCalley as a part of my biennial report to the Legislature of 1898-99. Other parts of this report are, Iron Making in Alabama, Second Edition, by Dr. William B. Phillips, already published; Bulletin No. 6, On the Clays of Alabama, by Dr. H. Ries, in manuscript and to be sent to press as soon as the present document is finished; Plant Life of Alabama, by Dr. Charles Mohr, now going through the press as a Bulletin of the National Department of Agriculture, by an arrangement which will be fully set forth in the preface to that work.

The present report has been substantially in manuscript since the spring of 1899, but could not be completed in all details till the map and illustrations were engraved, and this work was delayed by a strike.

Very respectfully,
EUGENE A SMITH.

University of Alabama.
Nov. 15, 1899.

PREFATORY LETTER.

UNIVERSITY, ALA., Oct. 9th, 1899.

DR. E. A. SMITH,
State Geologist,

SIR:—

I herewith submit a report on the Warrior Coal Basin to accompany the map lately published by the Survey on that basin. This report and map deals with perhaps the most valuable portion of the mineral region of Alabama. I have tried to make the report and map as independent of each other as possible, still for a proper understanding of each they should be studied together. They embrace the results of years of toilsome work in the tracing out of coal seams across a broken country. I believe that they are more complete than any report and map published of any coal field in this country outside of Pennsylvania. There are, however, many known facts about this coal basin that they do not show and there are doubtless many other facts about it that are not known. Nothing is said in the report and on the map, as to the adaptability of the coals for different purposes, as this has been shown sufficiently well by their uses on a large scale for coke and gas making, and for steam and domestic purposes.

Previous to the beginning of this work there had been no attempts at the tracing out of the coal seams of the Warrior Coal Basin, though some attempts had been made by the writer, from a study of the mere outcrops at intervals, at the correlating of the coal seams exposed in different parts of the field and at the making of a general vertical section of the coals of the field. It was soon found out, however, that these attempts could not be relied on, because of great variations and disturbances in the strata, and that the tendency in them was to duplicate the strata, and that the only way to be certain of the identity of any two outcrops, oftentimes but a short distance removed from each other, was to trace them out. The covering up of the outcrops by superficial deposits in the western and south-western parts of the field added very much to the difficulties met with in the tracing out of the coal seams.

The report and map are strictly speaking economic reports, as they are filled up with economic descriptions, particular stress being laid upon those things that were considered of most economic value. They treat of a region that is rich in coal, building and paving stones, clays, timber, water-power, etc. Coal, however, is the principal wealth of this region and as the report and map deal with it almost exclusively, they are strictly speaking *coal reports.*

The report consists of first generalized and then detailed descriptions. The general descriptions (Chapter 1) speak of the Warrior Coal Basin as a whole. They have a general section (Plate 1) of the strata of the basin so far as they usually carry workable coals (above the Black Creek Coal Seam), which shows the name, thickness, and relations to each other of all the coal seams and how they occur in groups. The detailed descriptions consist of six chapters and an appendix, a chapter to each of the group of coals. The report contains 7 plates (separates) and 50 figures (printed in the text). It also has detailed sections of nearly all the test pits made in the examination and tracing out of the coal seams, some of the sections of the thinner coals not being given. The map shows the lines of outcrops of all the principal coal seams and the country underlaid by them; and the location of all the test pits with the thickness of their coals. It also shows how the Coal Measures become covered up on the west and south-west by the Cretaceous and Tertiary strata and how they are bounded on the south-east by faults and the older formations. It has three general sections of the strata, one respectively along the southeast edge, central portion, and western visible edge of the basin, and some partial vertical sections to show the increased thickness of some of the coal seams between the portions of the field represented by the three general sections.

Liberal use has been made of the Topographical Sheets of the U. S. Geological Survey, so far as they cover this region. These sheets, though they are more or less wrong in many places, have been of inestimable value in this work and it has often been deeply regretted that they did not cover all of the Warrior Coal Basin. Many sections of coal seams and of drillings and shafts have been kindly given to the Survey free of cost, for all of which due credit has been given. It would not be right to close this letter without saying that Messrs. George N. Brewer and John T. Stanley, who had charge of the coal testing parties, rendered valuable assistance in the laborious and often difficult work of tracing out the different coal seams. To all who have helped me in any way in this work, I here extend my sincere thanks.

HENRY MCCALLEY.

CONTENTS.

Letter Transmittal III
Prefatory Letter V

THE WARRIOR COAL BASIN.

PAGES.
CHAPTER I.—General Descriptions 1
CHAPTER II.—The Black Creek Group of Coals 8
  The *Black Creek Coal Seam* 10
  The *Jefferson Coal Seam* 38
  The *Lick Creek Coal Seam* 58
CHAPTER III.—The Horse Creek (Mary Lee) Group of Coals 65
  The *Ream Coal Seam* 66
  The *Jagger Coal Seam* 73
  The *Blue Creek Coal Seam* 85
  The *Horse Creek* (*Mary Lee*) *Coal Seam* 96
  The *Newcastle Coal Seam* 120
CHAPTER IV—The Pratt Group of Coals 129
  The *Gillespie Coal Seam* 130
  The *Curry Coal Seam* 131
  The *American* (*Double*) *Coal Seam* 133
  The *Fire Clay* (*Cardiff*) *Coal Seam* 143
  The *Pratt Coal Seam* 148
CHAPTER V—The Cobb Group of Coals 169
  The *Thomas* (*Frierson*) *Coal Seam* 170
  The *Cobb Lower Coal Seam* 174
  The *Cobb Upper Coal Seam* 178
CHAPTER VI—The Gwin Group of Coals 183
  The *Thompson Mill Coal Seam* 183
  The *Gwin Coal Seam* 193
CHAPTER VII—The Brookwood Group of Coals 205
  The *Clements Coal Seam* 206
  The *Johnson Coal Seam* 211
  The *Milldale Coal Seam* 225
  The *Brookwood Coal Seam* 228
  The *Guide Coal Seam* 241
APPENDIX—Reported Records of Drillings and Shafts.

ILLUSTRATIONS.

PLATES.

I—General Section of the Strata above the Black Creek Coal Seam, Warrior Coal Basin.
II—The Black Creek Group of Coals as Shown by Borings and a Couple of Shafts
III—Sections of the Horse Creek (Mary Lee) Group of Coals.
IV—Sections of the Pratt Group of Coals.
V—Sections of the Cobb Group of Coals.
VI—Sections of the Gwin Group of Coals.
VII—Sections of the Brookwood Group of Coals.

FIGURES

(Printed in Text.)

PAGES.

1—Average Section of Black Creek Coal Seam along the eastern edge of the Warrior Coal Basin.................... 14
2—Average Section of Warrior (Black Creek and Jefferson united) Coal Seam at the Hoene and Pierce old drifts near Warrior.................................... 20
3—Average Section of the Black Creek Coal Seam in the south-western part of Cullman County.............. 25
4—Average Section of the Black Creek Coal Seam in the central part of the coal field, along the Black Warrior River 33
5—Average Section of the Black Creek Coal Seam in the western part of the Warrior Coal Field.............. 37
6—Average Section of the Jefferson Coal Seam in the eastern part of the Warrior Coal Field.................... 44
7—Average Section of the Jefferson Coal Seam in the central part of the Warrior Coal Field, along the Black Warrior River...................................... 48
8—Average Section of the Jefferson Coal Seam in the western part of the Warrior Coal Field.................... 55
9—Average Section of the Lick Creek Coal Seam in the eastern part of the Warrior Coal Field............... 60
10—Average Section of better outcrops of the Ream Coal Seam in the eastern part of the Warrior Coal Field......... 68

11—Average Section of the Jagger Coal Seam along the eastern edge of the Warrior Coal Field.................... 76
12—Average Section of the Jagger Coal Seam near Carbon Hill.. 83
13—Average Section of tha Blue Creek Coal Seam along the eastern edge of the Warrior Coal Field.............. 85
14—Average Section of th *actual mining*, as reported, in the *Blue Creek Mines*, at Adger, Johns and Sumter...... 87
15—Average Section of the Horse Creek (Mary Lee) Coal Seam along the eastern edge of the Warrior Coal Field. 98
16—Section of the Horse Creek (Mary Lee) Coal Seam in the mines at DeBerniere (Litttle Warrior)........... 102
17—Section of the Horse Creek (Mary Lee) Coal Seam in the Palos Mines.. 103
18—Section of the Horse Creek (Mary Lee) Coal Seam in the Horse Creek Mines. 107
19—Average Section of the Horse Creek (Mary Lee) Coal Seam in the central part of the Warrior Coal Field, along the Black Warrior River......... 109
20—Average Section of the Horse Creek (Mary Lee) Coal Seam near Cordova................................. 113
21—Section of the Horse Creek (Mary Lee) Coal Seam in the Calumet Mine.................................. 114
22—Section of the Horse Creek (Mary Lee) Coal Seam in the Gamble Mines.................................... 116
23—Average Section of the Horse Creek (Mary Lee) Coal Seam near Holly Grove and Chickasaw, Walker County. 119
24—Average Section of the Newcastle Coal Seam in its south-east out-crops................ 120
25—Average Section of the Newcastle Coal Seam at Newcastle. 122
26—Average Section of the Newcastle Coal Seam near Carbon Hill... 126
27—Average Section of the American (Double) Coal Seam in the eastern part of the Warrior Coal Field........... 133
28—Average Section of the American (Double) Coal Seam in the central portion of the Warrior Coal Field........ 139
29 Section of the Fire Clay (Cardiff) Coal Seam at Cardiff... 144
30—Average Section of Fire Clay (Cardiff) Coal Seam in the central part of the Warrior Coal Field.............. 146
31—Average Section of the Pratt Coal Seam in the eastern part of the Warrior Coal Field...................... 148
32—Average Section of the Pratt Coal Seam in the central portion of the Warrior Coal Field, along the Black Warrior River................................. 157
33—Average Section of the Corona (Pratt and Fire Clay united) Coal Seam at and near Coal Valley............. ... 162

34—Average Section of the Corona (Pratt and Fire Clay) Coal Seam at and near Patton. Corona, etc. 164
35—Average Section of the Thomas (Frierson) Coal Seam in the central part of the Warrior Coal Field, along the Black Warrior River, ... 171
36—Average Section of the Cobb Lower Coal Seam in the south-east part of the Warrior Coal Field 174
37—Outcrop of the Cobb Lower Coal Seam on the G. P. R. R. in the S, E. ¼ of S. W. ¼ of S. 31, T. 15. R. 9 W.... 177
38—Outcrop of the Cobb Upper Coal Seam in the S. E. ¼ of S. E. ¼ of S. 1, T. 18, R. 7 W 180
39—Outcrop of the Thompson Mill Coal Seam, at Thompson's Mill, on Davis Creek, in the S. W. ¼ of S. E. ¼ of S. 17, T. 19, R. 7 W 187
40—Section of the Thompson Mill Coal Seam in the Utley Mine in the S. W. ¼ of S. W. ¼ of S. 11, T. 18, R. 10 W 190
41—Average Section of the Gwin Coal Seam in its outcrops on the waters of Valley, Mud, Wolf and Big Shoal creeks 196
42—Average Section of the Clements Coal Seam in the south-eastern part of the Warrrior Coal Field 206
43—Average Section of the Clements Coal Seam in the Chambers, Foster, Prude, etc., mines 210
44—Average Section of the Johnson Coal Seam in the south-eastern part of the Warrior Coal Field 211
45—Average Section of the Johnson Coal Seam in the central and western parts of the Warrior Coal Field 220
46—Average Section of the Johnson Coal Seam in mines near Tuscaloosa, in the south-west end of the Warrior Coal Field 224
47—Average Section of the Milldale Coal Seam 225
48—Average Section of the Milldale Coal Seam at Brookwood and Milldale 227
49—Average Section of the Brookwood Coal Seam to the east of the Black Warrior River 229
50—Average Section of the Brookwood Coal Seam to the west of the Black Warrior River 237

◆

f
f
s
l
f
k
r
n

g
e,
al

THE WARRIOR COAL BASIN.

BY HENRY M'CALLEY.

CHAPTER I.

GENERAL DESCRIPTION.

The *Warrior Coal Basin* is not a very well defined area. It is the southwest end of the visible Coal Measures of the Warrior Coal Field. In contrast with the Plateau Region, into which it graudually merges on the northeast, it may be said to comprise almost all of the Warrior Coal Field that has higher strata than the hard sandstones and conglomerates near the base of the Coal Measures. As treated in the following report, however, it is not so extensive, but is limited by the outcrops of what might be termed the bottom workable coal seam (Black Creek Seam) of this part of the field. By a *workable coal* is meant a seam of coal of two feet and over in thickness. This bottom workable coal seam (Black Creek Seam), however, and much higher strata extend clear out to the southeast edge of the field, for a considerable distance, where the field is bounded on the southeast by a big thrust fault that engulfs all the lower Coal Measures and brings the upper Coal Measures in contact with Lower Cambrian strata to the southeast of them. There are, nevertheless, in this part of the Warrior Field several outcrops of coal of workable thickness of lower seams and hence of seams of more extensive areas than the Black Creek Seam, and it may happen that some of these lower seams carry considerable workable coal under the basin area.

The Warrior Coal Basin, as above defined, has along near its northeast boundary, the towns of Coaldale, Warrior, Quinton, Arkadelphia, Bremen, Natural Bridge and Delmar; Tuscaloosa at its visible southwest end; Clements, Ensley, Pratt Mines, Mary Lee, Newcastle and Bradford, along near its southeast boundary; and Fayette C. H., Winfield, Pikeville and Hamilton near its visible western boundary. It, therefore, comprises parts of the counties of Jefferson, Winston, Marion, Fayette and Tuscaloosa, and all of Walker. Its known area is something like 3,000 square miles. There is no way of telling how far its strata may extend to the southwest and west under the overlying Cretaceous and Tertiary formations.

This *basin area* is drained by the Black Warrior River with a general southwest trend, and its tributaries. Its area, as above defined, is shown on the Map of the Warrior Coal Basin by the lightest shade of color which underlies all of the darker shades. This basin area, as a whole, is the northeast part of a broad shallow basin that has its southwest part hid under Cretaceous and Tertiary strata. This northeast part is not of a simple regular basin, but is of one that is more or less complicated by folds and faults. It is the northeast part of a broad, broken up, unsymmetrical synclinal with its deepest part or its thickest strata near its southeast edge. It has no very great depressions or elevations and the strata over most of its area are, in a general way, comparatively level. They are in gentle undulations and have a small angle of general dip to the southwest. This small angle of general dip of the strata is characteristic of the Warrior Field when compared with the two other coal fields of Alabama. This dip, however, is greater than the surface inclination of the country and the fall in the streams, and so the strata increase in number towards the southwest. They continue to increase in this direction until they become covered up for good by the Cretaceous and Tertiary strata. They reach a thickness near their visible southwest end of nearly 2,000 feet over the Black Creek Coal Seam.

This *basin area* has, however, many local disturbances within it. Some of these disturbances are felt over considerable areas. It has extending down into it from the northeast the undenuded anticlinal of the Blountsville Valley and it has cut off from its southeast edge by a complex fold with faults a basin area that is known as the *Little Basin*. The rest of the Warrior Coal Basin, in contra distinction to the Little Basin, is known as the *Big Basin*.

The Blountsville anticlinal is felt for a long ways down into the Big Basin area. It throws out over it or there has been washed away from over its top, the strata of the *basin area* as far to the southwest as Quinton, causing the outcrops of these strata to take a long detour to the southwest to get over the anticlinal or from one side to the other side of the anticlinal. The Little Basin ,of about 40 square miles in area, has also extending down into it from the northeast an anticlinal fold. The low, broad anticlinal fold between the Big and Little basins is complicated, not only by faults but also by a narrow unsymmetrical synclinal along its crest. Its faults overlap each other with offsets towards the northwest.

The Warrior Coal Basin, as a whole, is also complicated, especially in its southeastern and southwestern parts, by transverse faults with a general north northwest and south-southeast direction. These transverse faults, however, do not, as a general thing, have as great vertical displacements as the strike faults.

The Warrior Coal Basin is made up, in the order of their abundance, of shales, sandstones, conglomerates and stone coals. The shales and sandstones form the great bulk of the strata. There is also at several horizons some little *limestones* and three to four seams of *black band ore*. The limestone, however, is not in thick beds like that of the Coal Measures in some other states and the black band ore is so uncertain as to both quantity and quality as to be considered of but little commercial value.

The coals are in from 2 to 5 regular seams in each of six groups, making in all twenty-three regular coal seams. The names of the groups, in an ascending order, are the *Black Creek, Horse Creek,Pratt, Cobb, Gwin and Brookwood.* (See Plate 1.) Only the two lower groups, the Black Creek and Horse Creek groups are to be found in the Little Basin. Each of these groups is named after its principle coal seam. The area covered by each of the groups is shown on the Map of the Warrior Coal Basin by a distinct color shade. The lightest shade stands for the lowest group and the darkest for the top group. Each shade, therefore, underlies all the darker shades, as each group underlies all overlying groups. These groups, as shown by the general vertical section, Plate 1, and the three *general sections* on the map, are separated from each other by on an average of from about 50 to 275 feet of barren strata. The two principal groups, the Horse Creek (Mary Lee) and Pratt groups, are the farthest apart of any two of the adjacent groups, being separated from each other by from about 175 to 375 feet of barren strata. The coal seams of the different groups are separated from each other by from 0 to 175 feet of strata.

The general section, Plate 1, includes all of the strata that are to be treated of in this report. The underlying Coal Measures of the Warrior Basin (those under the Black Creek Coal Seam), however, have an average thickness of some 1,400 feet with as many as fourteen different seams of coal. Only four, however, of these underlying coal seams appear to be always present and only two of them, and these two in only a few places appear to be ever of workable thickness in this basin area or in the sounth-west part of the Warrior Coal Field.

The regular coal seams to be treated of in this report are therefore 23 in number, as also shown by the general vertical sections, Plate 1 and Sections 1, 2 and 3 on the Map. These regular coal seams, however, are increased in number in places by the splitting up of one or more of them into separate and distinct coal seams and are reduced in number in other places either by the coming together of two of them into a single seam or the complete dying out of one or more of them. The lines of outcrops of the different coal seams, so far as traced out, are shown on the map. The outcrop of the top seam of each group is represented by simply a fine broken line; the second seam by a fine broken line with one included dot; the third by a broken line with two included dots; etc. Only the north-east and south-east outcrops of the coal seams are shown on the map, as these are their only outcrops, the other outcrops being covered up by newer formations. The small figures at irregular intervals on the lines of coal outcrops on the map stand for the thickness of the coal seams in inches. The thicker partings in the coal seams are not included in these figures which in many cases do not represent the full thickness of the coals, and sometimes perhaps only one of the coal benches or splits.

The coal seams, like the other strata of the coal field, will frequently so change from place to place on the outcrop within comparatively short distances of each other that the only safe way to identify for certain any one coal seam or stratum is to trace it out. The line of outcrops of at least the principal coal seam of each group has therefore been actually traced out. These lines of outcrops have been mapped principally from information obtained from the settlers and from the topography of the country, compiled from the best sources. They may therefore be more or less wrong on the map in many places, as there is no perfect topographical map of the State and as most men are liable to make mistakes in giving land numbers from memory. The lines of outcrops of some of the thinner seams are drawn off from occasional outcrops and from the topography, and were not actually traced out.

The sum total of coal in thickness is hardly the same in any two places. In a general way, however, in the basin area, it is greatest in the south-east outcrops and least in the north-west outcrops; the coal seams, in a general way, splitting up and thickening towards the south-east or towards the center of the original coal basin, and coming together and thinning out towards the north-west or edge of the original coal basin. For this reason, it is believed that when these coal seams have been correllated with those of the Cahaba Field, the same seams as a general thing will be found to carry more coal in the Cahaba Field than in the Warrior Field, because the former field is nearer the center of the original coal basin. An attempt has been made on Plate 1 to correllate some of the coal seams of these two fields. The sum total in the thickness of the coals of the Warior Coal Basin varies from about 10 to 115 feet.

The coal seams range in thickness from a few inches to some 16 feet. They are all more or less variable and no one of them is of workable thickness for the whole length of its outcrops. They all, however, with the exception of two, carry more or less workable coal on their outcrops. Four others, however, can barely be said to have any workable coal on the outcrops. Seven others are workable over not more than one-fourth of their outcrops; three others over perhaps about one-half of their outcrops; and the remaining four over most of their outcrops. It often happens that as one coal seam thickens up one of those nearest to it thins out.

The sum total in thickness of the coals in the southeast outcrops varies from about 20 to nearly 120 feet, with a mean of about 60 feet; in the central part of the field, along the river, from about 20 to nearly 62 feet, with a mean of nearly 35 feet; and along the western edge of visible coals from nearly 13 to nearly 30 feet, with a mean of between 21 and 22 feet. The strata on the outcrops in these three parts of the field are shown by the general sections, 1, 2 and 3 respectively, on the Map. Some of the strata, including some of the coals, are thicker, however, in places, than shown in either of the general sections and so other vertical sections are given on the Map.

The general section, Plate 1, and the three general sections on the Map serve to show not only how the coals occur in groups but also the relative positions of the different coal seams, their thickness, distances apart, names, etc.

The most of these coals, when thick enough, can be mined with ease and cheapness. They were mined first in a systematic and scientific way, though in a small way, in 1872, on the Louisville and Nashville Railroad, near Warrior. Now, some two or more of the coal seams of each group, with the exceptions of the Cobb and Gwin groups, or 12 seams in all are mined in a commercial way, and there are within this area some of the largest bituminous coal plants in the world. The mines that are now worked consist of considerably more than 12 shafts, 25 slopes, and 50 drifts. These mines, so far as known, are worked by the *pillar and stall method,* except in one single instance by the *long wall system.* Their annual output for 1898 was about 5,556,532 tons of coal.

The most of this coal is used within the State, nearly 2,000,000 tons of it being made into coke for iron ore smelting within the State. The annual coke output from the coals of this basin was 1,480,605 tons in 1898. Some of the coke ovens are located at the coal mines and others at the furnaces.

The coals, though all bituminous, are of various kinds. They, as has been shown by use on a large scale, are suitable not only for making coke but also for steam, heating and gas purposes. Some of them are brighter and harder than others and so are better adapted for transportation.

The Warrior Coal Basin has also in it, in seemingly almost inexhaustible quantities, fine building, paving, and curbing stones, and fine material (argillaceous shales) for the manufacture of vitrified bricks, tiles, etc. The building stones are often very homogeneous and 8 to 10 feet thick without a seam. The stones for the Government locks in the Black Warrior River at Tuscaloosa, magnificent pieces of masonry, were gotten from the bed of the river, in blasting out channels for the locks, and from the banks of the river close by. The paving and curbing stones with perfectly smooth and beautifully rippled marked sides can be gotten in many places, of almost any size and thickness. They are so uniform in places that they have received the name of *plank rocks.* The argillaceous shales occur in stratified beds up to 50 feet in thickness. They are manufactured into vitrified bricks, tiles, etc., of the best quality, at Coaldale. The most argillaceous of them, the underbeds to many of the coal seams, weather into an unctuous plastic clay that is very good potter's clay. These shale underbeds to the coal seams are usually very fossiliferous. The fossils are mostly of stem and leaf impressions of ferns, though some of them are of large specimens of *calamites, sigillaria,* etc. These large specimens, tree trunks, etc., have been seen in vertical positions extending up through the coal seams, and also standing upon the coal seams and extending up into the roofs.

The Warrior Coal Basin is still, for the most part, covered by its virgin forest of short and long leaf pines and the different varieties of hard wood (oaks,hickories, gums, etc.) It has also in it many fine sites for the erection of heavy machinery to be run by water power, the streams being often confined to narrow channels with rocky bottoms and sides.

Portions of this basin area has very good thansportation facilities, though much of it is still far removed from any such means of development. To the railroads that cross and enter it on the north, east and south, should be added the Black Warrior River that has a length of over 100 miles within it. This river has plenty of water for perennial navigation for steam tugs and coal barges or for a minimum channel an extreme low water of 80 feet wide by 4 feet deep. Its first rocky obstructions, the most south-west visible strata of the great Appalachian system, are at Tuscaloosa. Congress, realizing the national importance of this river as a means of furnishing cheap coal to the Gulf of Mexico for sea going vessels, placed its improvement at the last session on a continued basis.

eams.
ttom,
eams.
basin
ed to
and
sed to
, they
'erson
ɔn the
War-

n the
is ore
urphy
laces.
it is
other

lowest
Basin.
groups
ottom
basin

t aced
small
e they
ata are
, their
Hurri-
th-east
ey are
Creek
to the
'e they
to the
th-east
— 1) and

grea
reali
mea
for s
sessi

CHAPTER II.

THE BLACK CREEK GROUP OF COALS.

This group of coals usually carries three coal seams. These seams are known, commencing at the bottom, as the Black Creek, Jefferson and Lick Creek seams. In places, however, in the north-east part of the basin area, near Warrior, the number of seams are reduced to two by the coming together of the Black Creek and Jefferson seams, and in other places they are increased to four and in still other places, as near New Castle, they are increased to seven by the splitting of the Jefferson Seam. See Plate I and II and the general sections on the Map. The lower split of the Jefferson Seam near Warrior, takes the name of the Murphy Seam.

This group of coals carries also, especially in the eastern part of the field, some *black band ore.* This ore sometimes takes the place of the lower coal (Murphy Seam) of the Jefferson Seam and in other places, though not to the same thickness and quality, it is found at the top of the Jefferson Seam and in still other places at the top of the Black Creek Seam.

The Black Creek Group of Coals, being the lowest group of workable coals in the Warrior Coal Basin, underlies a larger territory than any of the other groups of this basin. The line of outer outcrops of its bottom coal seam may be said therefore to mark out the basin area of the Warrior Coal Field.

The outcrops of this group of coals have been traced around the Little Basin with the exception of a small distance at the north-east end of the basin, where they are likely engulfed in a fault or faults, as the strata are badly broken up and faulted. In the Big Basin, their most south-west visible outcrops are on Middle Hurricane Creek, in S. 21, T. 21, R. 7 W. To the north-east of that point, except along the water courses, they are covered up by superficial deposits to near Davis Creek where they begin to show and can be traced on to the north-east of Valley Creek to Black Creek where they become engulfed in a fault for 10 or 12 miles to the north-east. They are next recognized to the north-east just to the north-east of Pratt Mines (Slope No. 1) and from there their bottom coal seam (the Black Creek Seam) has been traced on to or near Newcastle, Bradford, Coaldale, Warrior, Quinton, Arkadelphia, Bremen, Nauvoo, Natural Bridge, Delmar, and on to the south-west, south of Buttahatchee River, until it is completely hid by the superficial deposits that cover the Coal Measures of the Warrior Feild on the west.

The sinuous line of outer outcrops of the lower coal seam of this group, which mey be taken as the boundary of the basin area of the Warrior Coal Field, from where it becomes covered up by superficial deposits on the south-east to where it becomes hid by like deposits on the north-west, must be all of 300 miles long. Its inner outcrops or lines of outcrops along the creeks and branches, in all of their ramifications, within the above outer line of outcrops, must add up to a length of double that of the other or to some 600 miles. These inner outcrops are due to erosion and may be said to be confined to the water courses except along on each side of the anticlinal between the Little and Big basins. The sum total, therefore, of the lines of outcrops of this bottom seam of coal must be near 1000 miles. It underlies parts of the counties of Jefferson, Cullman, Winston, Marion, Fayette, Walker and Tuscaloosa, a known area of some 3000 square miles.

The other coal seams of the group are of course not quite so extensive in their lines of outcrops or in their areas.

The Black Creek Seam is the main seam of the group except in the western part of the field where the Jefferson Seam becomes the main seam.

This group has from 4 to 6 feet of coal, with an average thickness between 5 and 6 feet, for the whole length of outcrops. Two of its seams (Black Creek and Jefferson) are now worked in a commercial way. They had an output of 315,542 tons of coal in 1898.

THE BLACK CREEK COAL SEAM.

This coal seam is one of the most uniform of any in the Warrior Coal Field, though it thins out towards the west and becomes too thin to work in the western part of the field. It is believed to be workable (2 feet and over in thickness) for at least 500 miles along its lines of outcrop. It is a hard, bright, black coal, most commonly without any partings, and is admirably suited for steaming and heating purposes. It is however in places in two benches that get to be 12 to 15 feet apart. It is also a good coking coal. It has never been mined extensively except along and near its south-east outcrops (along and near the Louisville and Nashville Railroad). It is now being mined at Newcastle, at and near Warrior , and at Coaldale, and has been mined also at Jefferson and Bradford. It is destined to be worked extensively for a long time to come. It furnished about 112,570 tons of coal of the output for 1898.

OUTCROPS OF THE BLACK CREEK COAL SEAMS.

The following sections are of this seam of coal at irregular intervals along on the outcrop, beginning with the most south-east outcrops.

I. IN THE LITTLE BASIN.

In the N. W. ¼ of S. E. ¼ of S. 12, T. 21, R. 7 W.

Coal	18 inches.
Slate	1 inch.
Coal	1 inch.

In public road in the N. E. ¼ of N. E. ¼ of S. 12, T. 21, R. 7 W.

Coal Smut	14 inches.

This is probably not the full thickness of the seam.

In the N. W. ¼ of N. E. ¼ of S. 7, T. 21, R. 6 W.

Coal Smut	28 inches.

This is not the full thickness of the seam.

In the N E. ¼ of S. E. ¼ of S 23, T. 20, R. 6 W.

Coal Smut	22 inches

In the N. E. ¼ of the S. E. ¼ of S. 23, T. 20, R. 6 W.

Coal Smut	12 inches.

In the S W. ¼ of S. E. ¼ of S. 13, T. 20, R. 6 W.

Coal Smut	21 inches.

In the N. W. ¼ of N. E. ¼ of S. 11, T. 19, R. 5 W.

Coal Smut	16 inches.

In the N. W. ¼ of N. E. ¼ of S. 10, T. 19, R. 5 W.

Coal Smut	16 inches

In the S. E. ¼ of N. W. ¼ of S. 16. T. 19, R. 5 W.

Coal Smut	12 inches.

In the N. E. ¼ of S. E. ¼ of S. 17, T. 19, R. 5 W.

Coal Smut	11 inches.

In the N. W. ¼ of S. E. ¼ of S. 25. T. 19, R. 6 W.

Coal Smut	30 to 48 inches.

In the N. W. ¼ of N. W. ¼ of S. 36, T. 19, R. 6 W.

Coal	26 inches.

In the S. W. ¼ of N. E. ¼ of S. 35. T. 19, R. 6 W.

Coal	41 inches.

In the S. W. ¼ of S. W. ¼ of S. 35. T. 19, R. 6 W.

Coal	40 inches.

In the S. W. ¼ of N. W. ¼ of S. 3. T. 20, R. 6 W.

Slate.	
Coal	1 to 2 inches.
Slate	6 to 8 inches.
Coal	1 inch.
Slate, about	24 inches.
Coal	25 inches.
Slate	1 inch.
Coal Smut	2¾ inches.
Clay Slate	¾ inch.
Coal	13 inches.
Slate, Clayey.	

In the S. E. ¼ of N. W. ¼ of S. 9, T. 20, R. 6 W.

Coal	29 to 48 inches.

In the N. E. ¼ of S. E. ¼ of S. 17, T. 20, R. 6 W.

Coal	11 inches.

In the S. E. ¼ of N. W. ¼ of S. 20, T. 20, R. 6 W.

Coal	19 inches.

In the N. W. ¼ of N. E. ¼ of S. 20, T. 20, R. 6 W.

Debris.	
Coal Smut	24 to 26 inches.
Slate, clayey	3 to 14 inches.
Coal Smut	5 to 6 inches.
Soil.	

In the N. W. ¼ of N. W. ¼ of S. 29, T. 20, R. 6 W.

Slate, Sandstone.	
Coal	6 inches.
Slate	4 inches.
Coal	7 inches.
Slate	15 inches.
Coal	9 inches.
Clay	6 feet.

This outcrop may be of the *Jefferson Seam.*

2. *IN THE BIG BASIN.*

In the N. E. ¼ of S. W. ¼ or S. 19, T. 20, R. 6 W.

Sandstone.	
Debris	25 feet.
Coal, good	19 inches.
Slate, clayey	4 inches.
Coal	1 inch
Clay	25 inches.
Coal	6½ inches.
Clay	11½ inches.
Coal	15 to 16 inches.
Clay, visible for about 1 foot.	

This outcrop may also be of the *Jefferson Seam.*

In the S. E ¼ of S W. ¼ of S. 17, T. 20, R. 6 W.

Shale, clayey.	
Coal	22 to 23 inches
Fire Clay	6 inches.
Coal	4 inches.
Fire Clay	36 inches.
Shale.	

In the S. W. ¼ of N. W. ¼ of S. 3, T. 20, R. 6 W.

Coal, reported	36 inches.

In the N. E. ¼ of S. E. ¼ of S. 34, T. 19, R. 6 W.

Sandstone, massive.	
Shale	6 feet.
Coal	15 inches.
Shale	48 inches.
Coal	15 inches.

In the N. W. ¼ of S. W. ¼ of S. 25, T. 19, R. 6 W.

Sandstone, shaly.	
Coal	2 inches.
Slate	½ inch.
Coal	4 inches.
Shale	4 inches.
Coal	28 inches.
Clay.	

In the S. W. ¼ of S. W. ¼ of S. 19, T. 19, R. 5 W.

Shale.	
Coal	1½ inches.
Shale	½ inch.
Coal	3 inches.
Shale	6 inches.
Coal	18 inches.
Shale	1 inch.
Coal	18 inches.
Shale, clayey.	

In the N. E. ¼ of S. W. ¼ of S. 19, T. 19, R. 5 W.

Coal, very fine	39 inches.

In the S. W. ¼ of N. E. ¼ of S. 19, T. 19, R. 5 W.

Coal	6 inches.
Shale	3 to 4 feet.
Coal	12 inches.

In the N. W. ¼ of S. W. ¼ of S. 2, T. 19, R. 5 W.

Coal	41 inches.

In the N. E. ¼ of N. W. ¼ of S. 2, T. 19, R. 5 W.

Coal	4 inches.
Shale	8 inches.
Coal	43 inches.

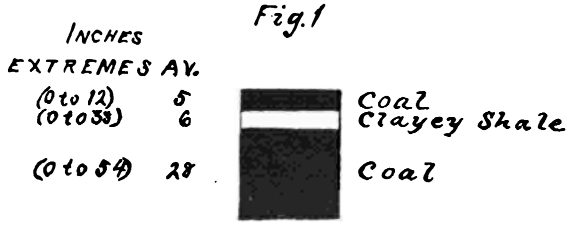

FIG. 1. *Average Section of the Black Creek Coal Seam along the eastern edge of the Warior Coal Basin.*

(This seam carries in places at the bottom one or more other strata of coal, usually thin.)

At the mouth of the *Bray Mine* (*Slope*) in the S. W. ¼ of N. E. ¼ of S. 11, T. 17, R. 3 E.

Shale.	
Coal	1 inch.
Shale	½ inch.
Coal	1 inch.
Shale	3 inches.
Coal	18 inches.

This may probably be the Murphy seam or only a part of the Jefferson Seam, as there is a streak of coal 30 to 35 feet under it.

In the N. W. ¼ of S. E. ¼ of S. 1, T. 17, R. 3 W.

Coal, clean, reported	26 inches.

In reported bore-hole at Mary Lee Mines.

Coal	44 inches.

In the reported bore-hole in the N. W. ¼ of S. W. ¼ of S. 17, T. 16, R. 2 W.

Coal	31 inches.

At the mouth of the *New Castle Mines (Slope)* in two places, in the N. E. ¼ of S. W. ¼ of S. 17, T. 16, R. 2 W.

Sandstone	25 feet.
Shale	15 feet.
Clay	1 to 2 inches.
Coal	16 inches.
Black slate, *Coal* in places	¼ inch.
Coal	11 inches.
Black slate, *Coal* in places	¼ inch.
Coal	4 inches.
Shale, blue and clayey	18 inches.
Shale	5 feet.
Sandstone, visible	13 feet.

In reported bore-hole near Newcastle.

Coal	34 inches.

In the S. E. ¼ of N. E. ¼ of S. 34, T. 15, R. 2 W.

Sandstone.	
Shale	15 to 20 feet.
Coal	24 inches.

In the S. E. ¼ of the N. W. ¼ of S. 24, T. 15, R. 2 W.

Sandstone, bluff.	
Shale, sandy	10 to 12 feet.
Coal	30 inches.

In the S. E. ¼ of S. W. ¼ of S. 13, T. 15, R. 2 W.

Sandstone, bluff.	
Clay	1 to 2 inches.
Coal	18 inches.

At the mouth of the *Cooper Slope* in the S. E. ¼ of N. E. ¼ of S. 11, T. 15, R. 2 W.

Sandstone.	
Shale	6 feet.
Coal	24 inches.
Blue clay	4 to 5 feet
Shale, visible some	20 feet.

In the S. W. ¼ of N. E. ¼ of S. 11, T. 15, R. 2 W.

Coal, reported	30 inches.

In the N. E. ¼ of S. W. ¼ of S. 2, T. 15, R. 2 W.

Sandstone.	
Shale	24 inches.
Coal	13 inches.
Shale	4 inches.
Coal	14 inches.

In the N. E. ¼ of N. W. ¼ of S. 1, T. 15, R. 2 W.

Sandstone.	
Shale	2 to 3 feet.
Coal	10 inches.
Shale	2 inches.
Coal	14 inches.

In the N. E. ¼ of S. E. ¼ of S. 36, T. 14, R. 2 W.

Coal	28 inches.

In the S. W. ¼ of N. E. ¼ of S. 25, T. 14, R. 2 W.

Coal	22 inches.
Shale	18 inches.
Coal	30 inches.

In the N. W. ¼ of S. E. ¼ of S. 24, T. 14, R. 2 W.

Coal	36 inches.

In the S. E. ¼ of S. E. ¼ of S. 12, T. 14, R. 2 W.

Coal	49 inches.

In the S. E. ¼ of S. E. ¼ of S. 11, T. 14, R. 2 W.

Shale.	
Coal	53 inches.
Shale	7 inches.
Coal	36 inches.

The thickness of the shale parting and the bottom coal was reported.

In the S. E. ¼ of S. E. ¼ of S. 1, T. 14, R. 2 W.

Coal and Slate	8 to 10 inches.
Coal, good	48 inches.
Coal and Slate	8 to 10 inches.

In the N. E. ¼ of S. E. ¼ of S. 6, T. 14, R. 1 W.

Sandstone.	
Shale	15 feet.
Coal	26 inches.

In the S. E. ¼ of N. E. ¼ of S. 6, T. 14, R. 1 W.

Coal	3 inches.
Shale	4 inches.
Coal	2 inches.
Shale	2 inches.
Coal	20 inches.

In the S. E. ¼ of S. W. ¼ of S. 32, T. 13, R. 1 W.

Coal	2 inches.
Shale	2 inches.
Coal	2 inches.
Shale	1 inch.
Coal	20 inches.

In the S. E. ¼ of S. E. ¼ of S. 31, T. 13, R. 1 W.

Coal	4 inches.
Shale	8 inches.
Coal	24 inches.

In the S. W. ¼ of S. E. ¼ of S. 31, T. 13, R. 1 W.

Coal	32 inches.

In the N. W. ¼ of N. E. ¼ of S. 31, T. 13, R. 1 W.

Shale.	
Coal	26 inches.
Shale with coal streaks	3 inches.
Coal	1 inch.
Shale	6 inches.
Coal	29 inches.

In the N. W. ¼ of S. E. ¼ of S. 25, T. 13, R. 2 W.

Sandstone, bluff.	
Shale	10 feet.
Coal, shaly	7 to 8 inches.
Coal, good	25 inches.
Clay.	

In the N. E. ¼ of N. E. ¼ of S. 2, T. 14, R. 2 W.

Coal	30 inches.

In the N. W. ¼ of N. W. ¼ of S. 2, T. 14, R. 2 W.

Coal smut	34 inches.

In the N. W. ¼ of N. E. ¼ of S. 3, T. 14, R. 2 W.

Coal smut	34 inches.

In the S. W. ¼ of N. E. ¼ of S. 27, T. 13, R. 2 W.

Coal	22 inches.

In the S. W. ¼ of S. W. ¼ of S. 27, T. 13, R. 2 W.

Coal	26 inches.

In the S. E. ¼ of S. W. ¼ of S. 34, T. 13, R. 2 W.

Shaly sandstone or sandy shale.	
Coal, shaly	8 to 10 inches.
Coal, good	26 to 28 inches.

In the N. W. ¼ of N. E. ¼ of S. 33, T. 13, R. 2 W.

Coal	36 inches.

In the S. E. ¼ of N. W. ¼ of S. 33, T. 13, R. 2 W.

Coal	36 inches.

In the N. W. ¼ of S. W. ¼ of S. 9, T. 14, R. 2 W.

Coal	26 inches.

In the S. E. ¼ of N. E. ¼ of S. 8, T. 14, R. 2 W.

Sandstone	15 to 20 feet.
Shale	15 feet.
Duck doe (plastic clay)	5 inches.
Coal, very fine, little shaly at top	36 inches.
Black bituminous shale	18 inches.
Clay.	

At the *Coaldale Drifts* in the N. W. ¼ of S. E. ¼ of S. 7, T. 14, R. 2 W., at six different places:

	(1)	(2)		(3)	(4)	(5)		(6)
Sandstone, massive	20 ft			20 ft	20 ft.	.....		.....
Shale, clayey	15 to 20 ft.	3 to 4 ft.		3 to 5 ft.	3 to 5 ft.	.....		.....
Coal	7 in.	6 in.	*Coal* with thin parting	.....	7 in.	8 in.	*Coal* with thin parting	.....
Clay slate	4 in.	2 to 3 in.		30 in.	2 in.	1 to 2 in.		43 in.
Coal	30 in.	26 in.		.....	24 in.	30 in.		.....
Clay, hard	3 ft	.....	.....	30 in.	30 in.	24 to 36 in.		.....
Shale	.....	.....	.....	.....	5 to 6 ft.	0		.....
Sandstone	.....	.....	.....		slabby	.....	.....	

In the S. W. ¼ of N. E. ¼ of S. 12, T. 14, R. 3 W.

Coal	7 inches.
Slate	2 inches.
Coal	25 inches.
Clay	3 to 4 feet.

At *Pierce's old drifts* in the S. W. ¼ of S. 12, T. 14, R. 3 W.

	Sandstones, flaggy at bottom.	
	Shales	14 to 18 inches.
Jefferson Seam	*Coal*	5 to 6 inches.
	Shale	1 to 2 inches.
	Black band, coaly	18 to 32 inches.
	Shale	20 to 42 inches.
Black Creek Seam	*Coal*	8 to 11 inches.
	Shale	1 to 3 inches.
	Coal	18 to 30 inches.

At six different drifts in *Wolf-Den Hollow* in the S. W. ¼ of N. E. ¼ of S. 13, T. 14, R. 3 W.

		1	2	3	4	5	6
	Sandstone, flaggy						
Jefferson Seam	*Coal*		21 in.				
	Black Band.		14 in.		24 in.		
	Shale and Sandst'e		33 ft.		12 ft.		
Black Creek Seam	*Coal*	1 in	0		0		
	Shale	⅙ in.	0		0		
	Coal	3 in.	6 in.	5 in.	*Coal* 10 to 12 inches		
	Shale	1 in.	1 in.	1 in.		12 in.	
	Coal	6 in.	6 in.	3 in.			
	Shale	18 in.	7 in.	11 in.	6 in.	8 in.	
	Coal	22 in.	26 in.	23 in.	24 in.	24 in	24 to 30 in.

At the *Hoene Drifts*, in the N. E. ¼ of S. W. ¼ of S. 14, T. 14, R. 3 W., the following five sections were taken.

		1	2	3	4	5
	Sandstone		Slaty			
Jefferson Seam	*Coal*	4 in.				
	Shale	0 to 2 in.				
	Coal	4 in.				
	Shale	0 to 1 in.				
	Coal	5 in.	6 in.	6 in.	6 in.	12 in.
	Shale	0	1 to 2 in.	0	0	0
	Black Band	21 in.	* 30 in.	23 in.	22 in.	21 in.
	Clayey Shale with *Kidney Ore*	30 in.	0 to 12 in	24 to 36 in.	0	12 in.
	Sandstone, Shaly	0	42 in.	0	0	15 in.
Black Creek Seam	*Coal*	10 in.	10 in.	11 in.	8 in.	7 in.
	Shale	16 in.	15 to 16 in.	6 in.	4 in.	9 in.
	Coal	25 in	22 in.	30 in.	27 in.	?
	Clay			4 to 5 ft.		

* The upper 25 inches is coaly and the remainder has slaty streaks in it.

At the drifts on the north side of the hollow, the parting between the Black Band and the underlying coal (Black Creek Seam) thickens within a short distance towards the west from 27 to 48 inches. At two others of these drifts, the coal under the Black Band (the Black Creek Seam) measured thus:

	6	7
Coal	13 in	10 in
Shale	13 in.	7 in.
Coal	24 in.	22 in.

In one of these drifts, the coal is said to be from 24 to 60 inches thick.

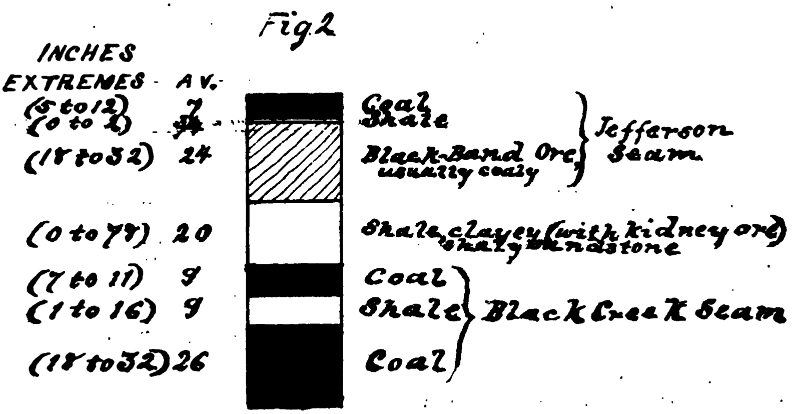

FIG. 2. *Average Section of the* Warrior Coal Seam *(the Black Creek and Jefferson Coal Seams united) at the Hoene and Pierce old drifts, near Warrior.*

The Pierce old drifts, the Wolf Den Hollow drifts, and the Hoene drifts are all near Warrior.

Outcrop in the N. W. ¼ of N. W. ¼ of S. 23, T, 14, R. 3 W.

Coal	22 to 23 inches.

In the N. W. ¼ of S. E. ¼ of S. 31, T. 14, R. 2 W.

Coal	38 inches.

Black Creek Seam in the Jefferson Shaft in the S. E. ¼ of N. E. ¼ of S. 35, T. 14, R. 3 W.

Coal, reported	24 to 54 inches.

In the N. E. ¼ of N. W. ¼ and N. E. ¼ of S. W. ¼ of S. 32, T. 14, R. 3 W.

Sandstone.	
Shale, sandy	10 to 14 feet.
Coal	27 inches.

In the S. E. ¼ of S. E. ¼ of S. 25, T. 15, R. 5 W.

Coal smut	20 inches.

In the S. E. ¼ of N. W. ¼ of S. 1, T. 16, R. 5 W.

Coal	1 inch.
Shale	4 inches.
Coal	25 inches.

In the S. W. ¼ of S. E. ¼ of S. 2, T. 16, R. 5 W.

Coal	30 inches.

In bore-holes in S. E. ¼ of N. W. ¼ of S. 11, T. 16, R. 5 W.

Sandstone hard	8 feet.
Coal, with two partings, reported	4 feet 8 inches.

In the S. W. ¼ of N. E. ¼ of S. 10, T. 16, R. 5 W.

Coal	3 inches.
Shale	2 inches.
Coal	3 inches.
Shale	12 inches.
Coal	19 inches.

In the S. E. ¼ of S. W. of S. 10, T. 16, R. 5 W.

Sandstone, massive.	
Shale, clayey	6 to 24 niches.
Coal	2 inches.
Shale	5 inches.
Coal	30 inches.
Sandstone, flaggy.	

In the S. E. corner of N. E. ¼ of S. 16, T. 16, R. 5 W.

Sandstone, debris.	
Shale, visible	8 inches.
Black Band, coaly and slaty	3 inches.
Coal	23 inches.
Slate.	

In the S. W. ¼ of N. W. ¼ of S. 9, T. 16, R. 5 W.

Coal	26 inches.

In the S. W. ¼ of S. W. ¼ of S. 9, T. 16, R. 5 W.

Coal	28 inches.

In the S. W. ¼ of N. E. ¼ of S. 17, T. 16, R. 5 W.

Coal	11 inches.
Shale, clayey	12 inches.
Coal	14 inches.

In the S. W. ¼ of S. E. ¼ of S. 4, T. 16, R. 5 W.

Coal smut	12 inches.
Soil about	5 feet.
Coal smut and clay	5 to 6 inches.
Coal smut	14 inches.

This outcrop does not likely represent the full thickness of the coal.

In the S. E. ¼ of S. E. ¼ of S. 29, T. 15, R. 5 W.

Shale.	
Coal smut	7 inches.
Shale, clayey	18 inches.
Coal smut	2 inches.

Near the center of S. E. ¼ of S. 29, T. 15, R. 4 W.

Sandstone.	
Shale, argillaceous	**8 to 10 feet.**
***Coal* and slate**	**4 inches.**
Shale, bluish, clayey	**17 inches.**
Coal	**23 to 24 inches.**
Shale, clayey.	

In the S. E. ¼ of N. W. ¼ of S. 21, T. 15, R. 5 W.

Coal	**10 inches.**
Shale with streaks of coal	**8 inches.**
Coal	**19 to 20 inches.**

In the S. W. ¼ of N. W. ¼ of S. 2, T. 15, R. 5 W.

Shales, some	**20 feet.**
Coal	**8 inches.**
Shale, clayey with coal streaks	**8 inches.**
Coal	**24 inches.**

In the N. W. ¼ of N. W. ¼ of S. 36, T. 14, R. 5 W.

Coal	**24 inches.**

In the N. E. ¼ of N. W. ¼ of S. 19, T. 14, R. 4 W.

***Coal,* reported about**	**48 inches.**

In the S. W. ¼ of S. W. ¼ of S. 18, T. 14, R. 4 W.

Coal	**32 inches.**

In the N. W. ¼ of S. 24, T 14, R 5 W.

Coal	**28 inches.**

In the N. E. ¼ of S. W. ¼ of S. 23, T. 14, R. 5 W.

Coal	**36 inches.**

In the S. W. ¼ of S. E. ¼ of S. 22, T. 14, R. 5 W.

Coal	**24 inches.**

In the N. W. ¼ of S. E. ¼ of S. 22, T. 14, R. 5 W.

Coal	**54 inches.**

In the S. W. ¼ of N. E. ¼ of S. 15, T. 14, R. 5 W.

Coal	**24 inches.**

In the N. W. ¼ of N. E. ¼ of S. 11, T. 14, R. 5 W.

Coal	**33 inches.**

In the N. E. ¼ of S. W. ¼ of S 1, T. 14, R. 5 W.

Coal ....30 inches.

In the N. E. ¼ of N. E. ¼ of S. 16, T. 14, R. 5 W.

Coal ....31 inches.

In the N. W. ¼ of S. E. ¼ ot S. 3, T. 14, R. 5 W.

Coal ....30 inches.

In the N. W. ¼ of S. E ¼ of S. 34, T. 13, R. 5 W.

Coal ....32 inches.

The following Sections in T. 14, R. 4. W . and T. 14, R. 5 W. were kindly given to the Survey by Mr. H. W. Milner, Secretary and Treasurer, Milner Coal & R. R. Co.

In S. E. ¼ of N. E. ¼ of S. 8, T. 14, R. 5 W.

Coal ....29 to 31½ inches.

In S. W. ¼ of N. W. ¼ of S. 5, T. 14, R. 9 W.

Coal ....30½ to 32½ inches.

In N. W. ¼ of S. E. ¼ of S. 7, T. 14, R. 4 W.

Coal ....27 inches.

In N. W. ¼ of N. W. ¼ of S. 17, T. 14, R. 4 W.

Coal ....34 inches.

In two places in S. W. ¼ of S. W. ¼ ot S. 18, T. 14, R. 4 W.

Coal ....32 to 32¾ inches.

In S. E. ¼ of S. E. ¼ of S. 18, T. 14, R. 4 W.

Coal ....35 inches.

In the S. E. ¼ of N. W. ¼ of S. 18, T. 14, R. 4 W

Coal ....35 inches.

In S. W. ¼ of S. E. ¼ of S. 18, T. 14, R. 4 W.

Coal ....30¾ inches.

In S. W. ¼ of S. W. ¼ of S. 2, T. 14, R. 5 W.

Coal ....31 inches.

In S. E. ¼ of N. E. ¼ of S. 1, T. 14, R. 5 W.

Coal ....29 inches.

In S. E. ¼ of S. W. ¼ of S. 23, T. 14, R. 5 W.

Coal ....25½ inches.

In S. W. ¼ of N. W. ¼ of S. 24, T. 14, R. 5 W.

Coal ....28½ inches.

In S. E. ¼ of S. W. ¼ of 24, T. 14 R. 5 W.

Coal ....27½ inches.

In the S. E. ¼ of N. E. ¼ of S. 26, T. 14, R. 5 W.

Coal ....26½ inches.

In the S. E. ¼ of N. W. ¼ of S. 25, T. 14, R. 5 W.

Coal ....25¾ inches.

In S. W. ¼ of N. E. ¼ of S. 25, T. 14, R. 5 W.

Coal ....27½ inches.

In N W. ¼ of N. E. ¼ of S. 35, T. 14, R. 5 W.

Coal ....25¾ inches.

In S. W ¼ of N. E. ¼ of S. 3, T. 15, R. 5 W.

Coal ....26 inches.

In N. W. ¼ of N. W. ¼ of S. 35, T. 14, R. 5 W.

Coal ....27 inches.

In the N. E. ¼ of S. W. ¼ of S. 27, T. 14, R. 5 W.

Coal ....25¾ inches.

Near center of S. 11, T. 14, R. 5 W.

Coal ....28 inches.

In N. W. ¼ of N. E. ¼ of S. 27, T. 14, R. 5 W.

Coal ....25½ inches.

In the S. W. ¼ of S. W. ¼ of S. 9, T. 14, R. 5 W.

Coal .... 37¾ inches.

In S. ½ of S. E. ¼ of S. 20, T. 14, R. 5 W.

Coal .... 28 inches.

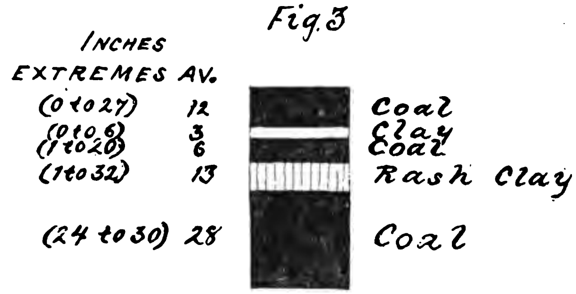

FIG. 3. *Average Section of the* Black Creek Coal Seam *in the south-western part of Cullman County.* (It has here in places one or more other strata of coal at the top, usually thin strata.)

In the *Clifty Coal Bed* in the N. W. ¼ of S. E. ¼ of S. 7, T. 13, R. 4 W., the following three sections were taken:

	1	2	3
Sandstone	20 ft.	20 ft.	20 ft.
Coal	2 to 3 in	0	0
Sandstone	6 to 12 in.	0	0
Coal	2 to 3 in.	3 in.	0
Sandstone	8 to 9 in.	16 in.	0
Coal	8 in.	5 in.	3 to 4 in.
Shale with *Coal Streaks*	8 in.	12 in.	8 in.
Coal	29 in.	26 in.	26 in.
Shale	....	....	....

Since the above sections were taken, this outcrop is said to have been drifted into and to be 40 inches thick.

In the S. W. ¼ of N. W. ¼ of S. 8, T. 13, R. 4 W.

Coal, reported .... 33 inches.

At the *York Coal Beds* in the S. E. ¼ of S W. ¼ of S. 5, T. 13, R. 4 W.

Sandstone.
Coal .... 29 inches.

Within the drifts at these beds, the *Coal* is said to be *34 inches* thick.

Outcrop in the N. W. ¼ of S. W. ¼ of S. 16, T. 13, R. 4 W.

Coal ....30 inches.

In the N. W. ¼ of N. W. ¼ of S. 23, T. 13, R. 4 W.

Coal ....30 inches.

In the S. W. ¼ of N. W. ¼ of S. 9, T. 13, R. 4 W.

Coal, reported ....28 inches.

In the N. W. ¼ of S. W. ¼ of S. 14, T. 13, R. 4 W.

Coal ....24 inches.

In the N. E. ¼ of S. W. ¼ of S. 2, T. 13, R. 4 W.

Coal ....25 inches.

In the S. E. ¼ of N. E. ¼ of S. 4, T. 13, R. 4 W.

Coal ....30 inches.

In the S. W. ¼ of N. E. ¼ of S. 34, T. 12, R. 4 W.

Coal, reported ....30 inches.

In the S. W. ¼ of N. E. ¼ of S. 27, T. 12, R. 4 W.

Sandstone.
Coal ....30 inches.

This coal is said to be *34 inches* thick at the head of an entry driven in 12 feet..

In the N. E. ¼ of S. E. ¼ of S. 35, T. 12 R. 4 W.

Coal, reported................................32 inches

In the S. W. ¼ of S. W. ¼ of S. 25, T. 12, R. 4 W.

Coal, reported................................27 inches

The following four sections are on Stout's (Parvis') Mountain:

At the *Harris Drift* in the S. W. corner of S. E ¼ of S, 10, T. 12, R. 3 W.

Shale cover.	
Coal, upper bench	24 inches.
Shale	¼ inch.
Coal	2 inches.
Shale, rash, and *coal*	2 inches.
Coal, lower bench	24 inches.

At the *Fuller* (*Purvis*) *Drift* in the S. W. corner of N. W. ¼ of S. W. ¼ of S. 10, T. 12, R. 3 W.

Sandstone.	
Shale	15 to 20 feet.
Coal, upper bench	19 inches.
Shale	¼ inch.
Coal	1 inch.
Shale	¼ inch.
Coal	1 to 2 inches.
Shale	½ inch.
Rash	1 to 3 inches.
Coal, lower bench	26 inches

In the S. E. ¼ of S. W. ¼ of S. 3, T. 12, R. 3 W.

Shale.	
Coal	4 inches.
Clay	¾ inch.
Coal	15 inches.
Shale and rash with *coal*	7 inches,
Coal	25 to 26 inches.

In the S. E. ¼ of S. E. ¼ of S. 4, T. 12, R. 3 W.

Shale, cover.	
Coal	19 inches.
Coal with two thin shaly streaks	6 inches.
Coal	26 inches.

In the S. E. ¼ of N. W. ¼ of S. 8, T. 12, R. 3 W.

Coal, reported	24 inches

In the N. W. ¼ of N W. ¼ of S. 18, T. 12, R. 3 W.

Sandstone, bluff.	
Coal	7 to 14 inches.
Clay, blue	2 inches.
Coal	3 to 5 inches.
Clay, blue, with two *coal* streaks near top	49 to 51 inches.
Coal, bottom bench, about	33 inches.

In the W. ½ of S. E. ¼ of S. 14, T, 12, R. 4 W.

Sandstone, bluff.	
Clay, debris, with perhaps *coal* in places	3 feet.
Shale	12 to 14 feet.
Coal (said to be 34 inches in drift)	30 inches.

At the drift in the N. E. ¼ of N. E. ¼ of S. 14, T. 12, R. 4 W.

Coal, bottom bench, reported to be in drift	34 inches.

The *upper bench* here on the outcrop is merely a few coal streaks, though it is said to thicken up in the drift.

At the *Hill Opening No. 2*, in the N. E. ¼ of N. W. ¼ of S. 13, T. 12, R. 4 W.

Sandstone	25 feet.
Shale	8 inches.
Coal, about	20 inches.
Shale with streaks of *coal*	12 to 14 inches.
Clay	12 to 15 inches.
Coal, some	30 inches.

At *Hill Opening No. 1*, in the S. E. ¼ of S. W. ¼ of S. 12, T. 12, R. 4 W.

Sandstone, bluff about	20 feet.
Shale, clayey	6 to 18 inches.
Coal, upper bench	18 to 20 inches.
Clay	½ to 3 inches.
Coal	3 inches.
Shale and *coal* in alternate seams	4 to 14 inches.
Shale, clayey	14 to 18 inches.
Coal, bottom bench, about	28 inches.

At the *Day Opening* in the N. W. ¼ of S. W. ¼ of S. 12, T. 12, R. 4 W.

Sandstone.	
Coal, upper bench,	27 inches
Shale	2 inches.
Coal	2 inches.
Shale, clayey	20 inches.
Coal, bottom bench	32 inches.

In the S. W. ¼ of S. E. ¼ of S. 15, T. 12, R. 4 W.

Coal, reported	35 inches.

At the *Bremen Coal Bed* about in the S. E. ¼ of N. W. ¼ of S. 22, T. 12 R. 4 W.

Sandstone, bluff.	
Shale, clayey	0 to 18 inches.
Coal, upper bench	4 inches.
Shale, clayey, blue in places, black in other places with *coal* streaks	22 to 40 inches
Coal, bottom bench, about	14 inches.

At the coal bed in the N. E. ¼ of S. W. ¼ of S. 22, T. 12, R. 4 W.

Coal, reported	31 inches.

Outcrop in the N. E. ¼ of N. W. ¼ of S. 33, T. 12, R. 4 W.

Coal, reported	23 inches.

In the N. W. ¼ of S. W. ¼ of S. 32, T. 12, R. 4 W.

Coal, reported	33 inches.

In the N. W. ¼ of S. E. ¼ of S. 26, T. 12, R. 5 W.

Coal ....30 inches.

In the N. E. ¼ of N. E. ¼ of S. 25, T. 12, R. 5 W.

Coal ....25 inches.

In the S. E. ¼ of N. W. ¼ of S. 19, T. 12, R. 4 W.

Coal ....30 inches

In the N. W. ¼ of N. E. ¼ of S. 6, T. 12, R. 4 W.

Coal ....24 inches.

In the N. E. ¼ of S. E. ¼ of S. 25, T. 11, R. 5 W.

Coal ....30 inches.

In the N. W. ¼ of N. W. ¼ of S. 28, T. 11, R. 5 W.

Coal ....16 inches.

In the N. E. ¼ of N. W. ¼ of S. 5, T. 12, R. 5 W.

Coal ....20 inches.

In the N. W. ¼ of N. E. ¼ of S. 23, T. 12, R. 6 W.

Coal ....18 inches.

In the S. W. ¼ of S. E. ¼ of S. 11, T. 12, R. 5 W.

Coal ....33 inches.

In the S. W. ¼ of N. E. ¼ of S. 34, T. 12, R. 5 W.

Coal ....22 inches.

In the S. W. ¼ of N. W. ¼ of S. 34, T. 12, R. 5 W.

Coal ....30 inches.

In the N. W. ¼ of N. W. ¼ of S. 22, T. 13, R. 5 W.

Coal ....15 inches.

In the S. E. ¼ of S. E. ¼ of S. 28, T. 13, R. 5 W.

Coal ....28 inches.

In the S. W. ¼ of N. W. ¼ of S. 34, T 13, R. 5 W.

Coal	28 inches.

In the N. E. ¼ of N. W. ¼ of S. 4, T. 14, R. 5 W.

Coal	30 inches.

In the N. W. ¼ of N. E. ¼ of S. 16, T 14, R. 5 W.

Coal	30 inches.

In the N. W. ¼ of N. W. ¼ of S. 28, T. 14, R. 5 W.

Coal	28 inches.

In the S. E. ¼ of N. E. ¼ of S. 29, T. 14, R. 5 W.

Coal	45 inches.

In the N. W. ¼ of S. W. ¼ of S. 28, T. 14, R. 5 W.

Coal	30 inches.

In bore-hole in the S. E. ¼ of S. E. ¼ of S. 12, T. 15, R. 6 W.

Coal, reported to be *very thick.*

In the S. W. ¼ of S. W. ¼ of S. 20, T. 14, R. 5 W.

Coal	30 inches.

In the S. E. ¼ of S. E. ¼ of S. 20, T. 14, R. 5 W.

Coal	30 inches.

The following sections between Sipsey and Mulberry Forks of Warrior River were kindly given to the Survey by Mr. John P. Willoughby, General Land Agent, L. & N. R. R.

In the E. ½ of N. E. ¼ of S. 21. T. 14. R. 5 W.

Coal	29 inches.

In the S. E. ¼ of N. W. ¼ of S. 10, T. 14, R. 5 W.

Coal	30 inches.

In the S. ½ of N. E. ¼ of S. 28, T. 13, R. 5 W.

Coal	21 inches.
Slate	10 inches.
Coal	13 inches.

In the N. E. ¼ of N. W. ¼ of S. 22, T. 13, R. 5 W.

Coal	26 inches.

In the N. E. ¼ of S. E. ¼ of S. 13, T. 13, R. 5 W.

Coal	26 inches.

In bore-hole in S. W. ¼ of S. W. ¼ of S. 13, T. 13, R. 5 W.

Coal, clean	30 inches

In bore hole in N. W. ¼ of N. E. ¼ of S. 5, T. 13, R. 4 W.

Coal	40 inches

In bore-hole in E. ½ of N. E. ¼ of S. 23, T. 12, R. 5 W.

Coal	38 inches

The following sections in T. 12, R. 3 W. are on Stout's Mountain.

At School House Mine in N. W. ¼ of S. E. ¼ of S. 11, T. 12, R. 3 W.

Coal	24 to 30 inches.
Parting	18 to 23 inches.
Coal	25 inches.

In surface pit in N. W. ¼ of S. W. ¼ of S. 11, T. 12, R. 3 W.

Coal	22 inches.
Parting	14 inches.
Coal	26 inches.

In the Harris Mine in S. W. ¼ of S. E. ¼ of S. 10, T. 12, R. 11 W.

Coal	28 inches.
Parting	3 inches.
Coal	25 inches.

In the Purvis Mine in N. E. ¼ of S. W. ¼ of S. 10, T. 12, R. 3 W.

Coal	22 inches.
Parting	3 inches.
Coal	26 inches.

In surface pit in N. W. ¼ of S. W. ¼ of S. 10 T. 12, R. 3 W.

Coal	25 inches.
Parting	3 inches.
Coal	26 inches.

In the S. W. ¼ of N. W. ¼ of S. 10, T. 12, R. 3 W.

Coal	23 inches.
Parting	3 inches.
Coal	24 inches.

In the N. W. ¼ of S. E. ¼ of S. 9, T. 12, R. 3 W.

Coal	22 inches.
Parting	2 inches.
Coal	24 inches.

In the S. W. ¼ of N. W. ¼ of S. 10, T. 22, R. 3 W.

Coal smut	7 inches'
Parting	5 inches.
Coal	25 inches.

In the S. E. ¼ of N. W. ¼ of S. 9, T. 12, R. 3 W.

Coal	4 inches.
Parting	3 inches.
Coal	4 inches.
Parting	½ inch.
Coal	26 inches.

Sections of the Stout Mountain coal in some of the places given above have already been given, but then none of the sections are identically the same. There is also a disagreement in the location of some of the places that are doubtless the same.

In the S. E. ¼ of S. E. ¼ of S. 31, T. 11, R. 4 W.

Coal	24 inches.
Slate, mixed with *coal.*	

In the E. ½ of S. E. ¼ of S. 11, T. 12, R. 5 W.

Coal	27 inches.
Black shale	6 inches
Brash (coal and shale)	3 inches
Shale	4 inches
Coal	2 inches.

In the S. E. ¼ of N. W. ¼ of S. 33, T. 12, R. 5 W.

Coal	24 inches.
Shale, mixed with ½ inch seams of *coal*	26 inches

In the S. E. ¼ of N. W. ¼ of S. 19, T. 12, R. 4 W.

Coal	26 inches.

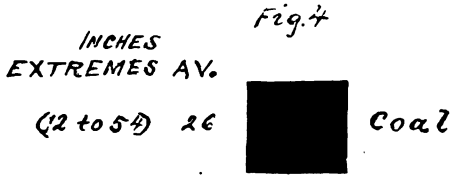

FIG. 4. *Average Section of the* Black Creek Coal Seam *in the central part of the field, along near the Warrior River.*

In the S. E. ¼ of N. E. ¼ of S. 21, T. 14, R. 5 W.

Debris.	
Coal smut	3 inches.
Clay	36 inches.
Coal smut	6 inches.
Clay	6 inches.
Shale with *coal streaks*	6 inches.
Coal smut	1 to 2 inches.
Clay	3 inches.
Coal smut	27 inches.
Clay.	

This outcrop may not represent the full thickness of the coal.

Some 175 yards to the northearst of the last outcrop.

Coal smut	8 inches.
Shale	1 nich.
Coal smut	15 inches.
Clay.	

In the S. W. ¼ of N. W. ¼ of S. 16, T. 14, R. 5 W.

Coal	30 inches.

In the S. W. ¼ of N. W. ¼ of S. 9, T. 14, R. 5 W.

Coal	24 inches.

In the N. E. ¼ of N. E. ¼ of S. 5, T. 14, R. 5 W.

Coal	18 inches.

In the S. W. ¼ of S. E. ¼ of S. 35, T. 13, R. 6 W.

Coal	24 inches.

In the N. W. ¼ of N. W. ¼ of S. 1, T. 14, R. 6 W.

Coal	25 inches.

In the S. W. ¼ of N. E. ¼ of S. 1, T. 14, R. 6 W.

Coal ....26 inches.

In the N. W. ¼ of S. E. ¼ of S. 1, T. 14, R. 6 W.

Coal with irregular streaks of shale ....30 inches.

In the N. W. ¼ of N. E. ¼ of S. 12, T. 14, R. 6 W.

Coal ....25 inches.

In the N. E. ¼ of S. W. ¼ of S. 12, T. 14, R. 6 W.

Coal ....12 inches.

In the N. E. ¼ of N. W. ¼ of S. 13, T. 14, R. 6 W.

Coal ....12 inches.

In the N. E. ¼ of N. E. ¼ of S. 22, T. 14, R. 6 W.

Coal ....10 inches.

In the N. W. ¼ of N. E. ¼ of S. 15, T. 14, R. 6 W.

Coal ....14 inches.

In the S. E. ¼ of S. W. ¼ of S. 10, T. 14, R. 6 W.

Coal ....14 inches.

In the S. E. ¼ of N. E. ¼ of S. 27, T. 13, R. 6 W.

Coal ....30 inches.

In the N. W. ¼ of N. E. ¼ of S. 27, T. 13, R. 6 W.

Coal ....36 inches.

In the S. W. ¼ of S. W. ¼ of S. 28, T. 13, R. 6 W.

Coal ....34 inches

In the S. W. ¼ of S. W. ¼ of S. 19, T. 13, R. 6 W.

Coal ....24 inches.

In the N. E. ¼ of N. W. ¼ of S. 24, T. 13, R. 7 W.

Coal ....33 inches.

In the N. W. ¼ of S. W. ¼ of S. 14, T. 13, R. 7 W.

Coal ....22 inches.

In the S. E. ¼ of S. E. ¼ of S. 10, T. 13, R. 6 W.

Coal ....18 inches

In the S. E. ¼ of N. W. ¼ of S. 35, T. 12, R. 6 W.

Coal ....24 inches.

In the N. W. ¼ of N. W. ¼ of S. 16, T. 12, R. 7 W.

Coal ....30 inches.

In the N. W. ¼ of S. W. ¼ of S. 17, T. 12, R. 7 W.

Coal ....12 inches

In the S. W. ¼ of S. W. ¼ of S. 18, T. 12, R. 7 W.

Coal ....12 inches

In the S. E. ¼ of N. W. ¼ of S. 8, T. 12, R. 8 W.

Coal ....26 inches

In the S. E. ¼ of N. W. ¼ of S. 33, T. 11, R. 8 W.

Coal ....30 inches.

In the S. E. ¼ of N. E. ¼ of S. 32, T. 11, R. 8 W.

Coal ....18 inches

In the S. W. ¼ of S. E. ¼ of S. 22, T. 11, R. 8 W.

Coal ....24 inches.

In the eastern part of the S. E. ¼ of S. 13, T. 12, R. 8 W.

Coal ....17 to 18 inches

At the *Bennett Coal Bed* in the northern part of S. E. ¼ of S. 24, T. 12, R. 8 W.

Sandstone, massive, bluff with *rock-house*........23 feet
Shale, clayey ....3 to 5 inches
Coal ....18 to 19 inches
Shale.

In the N. W. ¼ of S. W. ¼ of S. 14, T. 12, R. 9 W.

Coal ....18 inches

In the S. W. ¼ of N. W. ¼ of S. 15, T. 12, R. 9 W.

Coal ....18 inches

In the N. W. ¼ of N. W. ¼ of S. 15, T. 12, R. 9 W.

Coal ....24 inches.

In the N. W. ¼ of N. W. ¼ of S. 21, T. 11, R. 10 W.

Coal ....20 inches

In the N. W. ¼ of N. E. ¼ of S. 19, T. 12, R. 10 W.

Coal ....31 inches

In the N. E. ¼ of N. W. ¼ of S. 19, T. 12. R. 10 W.

Coal ....31 inches

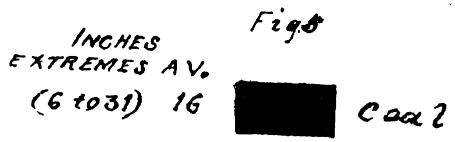

FIG. 5. *Average Section of the* Black Creek Coal Seam *in the western part of the Warrior Coal Field.* (The seam has in this part of the field in places an underlying bench.)

In bore hole in N. E. ¼ of N. E. ¼ of S. 23, T. 13, R. 10 W.

Coal, slaty	6 inches
Coal, clean	26 inches
Parting	½ inch
Coal, clean	9 inches

In reported bore hole in N. E. ¼ of N. W. ¼ of T. 13, R. 10 W.

Coal ....48 inches

Outcrop in the N. W. ¼ of S. E. ¼ of S. 7, T. 12, R. 11 W.

Coal ....14 inches

In the north-east part of S. 27, T. 12, R. 8 W.

Sandstone, bluff,	
Shale with streaks of coal	4 to 5 inches
Coal	15 to 16 inches

At the *Wilson Coal Bed* in the S. E. ¼ of N. E. ¼ of S. 32, T. 12, R. 8 W.

Sandstone, bluff.	
Debris for several feet.	
Sandstone with streaks of coal	5 to 6 inches
Coal with slate streaks	2 to 3 inches
Coal	15 to 16 inches

This coal crop is said to crop out in several other places in Teagle Creek, higher up the creek, and to be in places *26 inches thick.*

In the S. E. ¼ of N. W. ¼ of S. 29, T. 12, R. 8 W.

Sandstone, bluff.	
Shale	10 inches.
Coal, with slate streaks	2 inches
Coal, reported to be 22 inches thick in places,	14 to 15 inches

In the S. E. ¼ of N. W. ¼ of S. 9, T. 12, R. 8 W.

Sandstone, bluff.	
Shale	18 inches
Coal	17 to 19 inches

In the S. W. ¼ of N. E. ¼ of S. 30, T. 12, R. 8 W.

Coal	30 inches.

In the S. E. ¼ of N. W. ¼ of S. 30, T. 12, R. 8 W.

Coal	20 inches.

In the S. ½ of S. 31, T. 12, R. 8 W.

Coal, reported	12 inches

In bore-hole in S. 21, T. 13, R. 8 W.

Coal	20 inches

In the S. W. ¼ of N. W. ¼ of S. 35, T. 12, R. 9 W.

Sandstone, bluff.	
Coal	8 to 10 inches

In the N. W. ¼ of N. W. ¼ of S. 23, T. 12, R. 9 W.

Coal	18 inches

In the N. W. ¼ of S. W. ¼ of S. 14, T. 12, R. 9 W.

Coal ....18 inches

In the S. W. ¼ of N. W. ¼ of S. 15, T. 12, R. 9 W.

Coal ....18 inches

In the N. W. ¼ of N. W. ¼ of S. 15, T. 12, R. 9 W.

Coal ....24 inches.

In the N. W. ¼ of N. W. ¼ of S. 21, T. 11, R. 10 W.

Coal ....20 inches

In the N. W. ¼ of N. E. ¼ of S. 19, T. 12, R. 10 W.

Coal ....31 inches

In the N. E. ¼ of N. W. ¼ of S. 19, T. 12. R. 10 W.

Coal ....31 inches

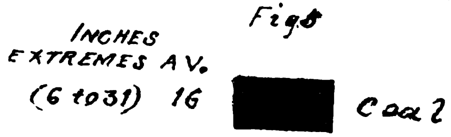

FIG. 5. *Average Section of the* Black Creek Coal Seam *in the western part of the Warrior Coal Field.* (The seam has in this part of the field in places an underlying bench.)

In bore hole in N. E. ¼ of N. E. ¼ of S. 23, T. 13, R. 10 W.

Coal, slaty	6 inches
Coal, clean	26 inches
Parting	½ inch
Coal, clean	9 inches

In reported bore hole in N. E. ¼ of N. W. ¼ of T. 13, R. 10 W.

Coal ....48 inches

Outcrop in the N. W. ¼ of S. E. ¼ of S. 7, T. 12, R. 11 W.

Coal ....14 inches

Near the center of N. W. ¼ of S. 21, T. 11, R. 10 W.

Sandstone.	
Shale	5 to 8 feet
Coal	16 to 17 inches

In the N. E. ¼ of N. E. ¼ of S. 29, T. 10, R. 10 W.

Sandstones, with *rock-houses.*	
Coal, hard, bony, and slaty	18 to 20 inches
Shale, clayey.	

In the N. W. ¼ of N. W. ¼ of S. 7, T. 11, R. 10 W.

Sandstone.	
Coal, visible for	12 inches

In well in the N. E. ¼ of N. E. ¼ of S. 18, T. 12, R. 11 W.

Coal, reported	18 inches

Near the center of the S. E. ¼ of S. 7, T. 12, R. 11 W.

Sandstones.	
Shales, clayey	2 feet
Coal, shaly, with two shale partings	14 inches

In reported bore hole in S. W. ¼ of N. E. ¼ of S. 33, T. 12, R. 12 W.

Coal	6 inches

In reported bore-hole in N. W. ¼ of S. W. ¼ of S. 23, T. 12, R. 12 W.

Coal, bright and hard	9 inches
Shales, clayey	11 feet 6 inches
Coal	9 inches

THE JEFFERSON COAL SEAM.

This coal seam, called the *Elk River Coal Seam* at Galloway, is workable in both the eastern and western parts of the coal field. In the central part of the field, along the Black Warrior River, it does not appear from the outcrops to be of much value. In the eastern part of the field, where it has one or more shale partings, it is not at all uniform. The lower and greater portion of it is there in places a coaly *black band iron ore.* In this eastern part of the field, it is in places united with the underlying Black Creek Coal Seam, the strata between the two seams having thinned out and the two forming a single thick seam; while in other places in this same part of the coal field it is not only widely separated from the

Black Creek Seam but is split up into as many as 5 different seams. The uppermost and lowest of these 5 different seams are some 60 feet apart. The lower of it splits near Warrior, called the *Murphy Seam,* corresponds to the *black band ore* portion of the main seam, though it is usually a *coal* and not a *black band ore.* As a *black band ore,* it is thickest and purest, as a general thing, where the Jefferson and Black Creek seams are close together or united.

In the western part of the field, the Jefferson Coal Seam is usually a pure clean coal about 30 inches thick. In the central part of the field, along the Black Warrior River, it is usually a poor shaly coal that is often thin and is sometimes nothing more than a coaly bituminous shale, perhaps ferruginous in places.

This coal seam has been mined in the eastern part of the field at the Warrior Shaft, Pearson Slope, Fidelity (Watts) Drifts, and Jefferson Shaft, and where united with the Black Creek Seam in the Hoene and Pierce old drifts; and in the western part of the field at the Tupelo, Natural Bridge, Leon, and Mary Ella (Delmar) Drifts, in the Galloway Shaft, and in the Brilliant drifts near Winfield. It furnished about 202,972 tons of the coal output for 1898.

OUTCROPS OF THE JEFFERSON COAL SEAM.

IN THE LITTLE BASIN.

In the N. E. ¼ of N. W. ¼ of S. 34, T. 20, R. 6 W.

Black band	4 inches
Coal	8 inches
Slate	4 inches
Coal	4 inches

In the S. E. ¼ of S. E. ¼ of S. 22, T. 20, R. 6 W.

Black band	4 inches
Coal	12 inches

In the S. E. ¼ of S. W. ¼ of S. 5, T. 20, R. 5 W.

Coal	¼ inch
Shale	1 inch
Coal	1 inch
Shale	1 to 2 inches
Coal	2 inches
Shale	¼ inch
Coal	1 inch
Shale	6 to 7 inches
Coal	5 to 6 inches

In the N. W. ¼ of N. W. ¼ of S. 4, T. 20, R. 4 W.

Coal smut	1 inch
Shale	2 inches
Coal smut	1 to 2 inches
Shale	36 inches
Coal smut	14 inches

In the S. W. ¼ of S. W. ¼ of S. 14, T. 9, R. 5 W.

Coal smut	12 inches
Shale	1 inch
Coal smut	4 inches
Shale	36 inches
Coal and shale, in alternate streaks	36 inches

In the N. E. ¼ of N. W. ¼ of S. 14, T. 19, R. 5 W.

Coal	5 inches
Shale	36 inches
Coal	10 inches
Shale	15 inches
Coal	6 to 7 inches
Shale	1 to 2 inches
Coal	25 inches

In the N. E. Corner of S. E. ¼ of S. 15, T. 19, R. 5 W.

Coal	8 inches
Shale	16 inches
Coal	10 inches
Shale	8 inches
Coal	1 inch
Shale	3 inches
Coal	20 inches
Shale	1 inche
Coal	¼ inch
Clay.	

In the S. W. ¼ of S. E. ¼ of S. 2, T. 19, R. 5 W.

Coal Smut	20 inches

In the N. E. ¼ of S. E. ¼ of S. 17, T. 19, R. 5 W.

Coal	6 inches
Shale	11 inches
Coal	16 inches
Shale	6 inches
Coal	13 inches

In the N. W. ¼ of N. W. ¼ of S. 30, T. 19, R. 5 W.

Coal Smut	6 inches
Shale	17 inches
Coal Smut	15 inches

In the N. W. ¼ of S. E. ¼ of S. 25, T. 19, R. 6 W.

Coal Smut, about	36 inches

In the S. E. ¼ of N. W. ¼ of S. 9, T. 20, R. 6 W.

Coal	3 inches
Shale	60 inches
Coal	14 inches
Shale	20 inches
Coal	3 inches

In the N. E. ¼ of N. W. ¼ of S. 20, T. 20, R. 6 W.

Coal smut	24 to 26 inches
Shale, clayey	13 to 14 inches
Coal Smut	5 to 6 inches
Debris	

In the N. W. ¼ of N. W. ¼ of S. 29, T. 20, R. 6 W.

Coal	6 inches
Shale	4 inches
Coal	7 inches
Shale	15 inches
Coal	9 inches
Shale, clayey	72 to 84 inches
Coal	10 inches

In the N. W. ¼ of N. E. ¼ of S. 31, T. 20, R. 6 W.

Coal	19 inches
Shale	10 inches
Coal	6 inches

IN THE BIG BASIN.

In the N. E. ¼ of N. E. ¼ of S. 21, T. 21, R. 7 W.

Coal, reported	30 inches
Clay, reported	24 inches
Coal, reported	15 inches

In the N. E. ¼ of S. W. ¼ S. 19, T. 20, R. 6 W.

Shale	
Coal	19 inches
Shale	4 inches
Coal	1 inch
Shale	25 inches
Coal	6 to 7 inches
Shale	11 to 12 inches
Coal	15 to 16 inches
Clay	

In two places in the N. W. ¼ of N. E. ¼ of S. 19, T. 20, R. 6 W.

	(1)	(2)
Sandstone		
Coal with clayey slate seams	7 inches	10 inches
Coal	13 inches	10 inches

In the N. W. ¼ of S. E. ¼ of S. 24, T. 19, R. 6 W.

Sandstone	
Shale, about	6 feet
Coal	15 inches
Shale, reported	48 inches
Coal, reported	15 inches

In the N. W. ¼ of S. W. ¼ of S. 25, T. 19, R. 6 W.

Coal	2 inches
Shale	½ inch
Coal	4 inches
Shale	4 inches
Coal	28 inches

In the S. W. ¼ of S. W. ¼ of S. 19, T. 19, R. 5 W.

Shale	
Coal	1 to 2 inches
Shale	½ inches
Coal	3 inches
Shale	6 inches
Coal	18 inches
Shale	1 inch
Coal	18 inches
Shale, clayey	

In the N. E. ¼ of S. W. ¼ of S. 19, T. 19, R. 5 W.

Coal, very fine	38 to 39 inches

Near center of S. 19, T. 19, R. 5 W.

Shale, hard	
Coal	15 inches
Shale, clayey	6 inches
Coal	9 inches
Pyrite streak	
Coal	19 inches
Shale, clayey	

In the S. W. ¼ of N. E. ¼ of S. 19, T. 19, R. 5 W.

Coal	3 to 4 inches
Shale	½ inch
Coal	36 inches

In the S. E. ¼ of N. E. ¼ of S. 11, T. 17, R. 3 W.

Shale, cover	
Coal, slaty	1 inch
Shale	4 inches
Coal	9 inches
Shale	2 inches
Coal	1 to 2 inches
Shale	5 inches
Coal	6 inches
Shale	1 inch
Coal	3 inches
Shale	½ inch
Coal	3 inches
Shale	1 inch
Coal	11 inches
Shale	½ inch
Coal	4 inches
Shale	1 to 2 inches
Coal	¾ inches
Clayey shale	

In the S. W. ¼ of S. E. ¼ of S. 11, T. 17, R. 3 W.

Coal	15 inches
Shale, clayey	6 inches
Coal	9 inches
Shale	streak
Coal	19 inches

In the N. W. ¼ of S. E. ¼ of S. 1, T. 17, R. 3 W.

	(1)	(2)
Shale, cover		
Coal streak		
Shale	2 inches	
Coal	12 inches	13 inches
Shale, clayey	6 inches	3 inches
Coal	12 to 13 inches	12 inches
Shale, clayey	2 inches	1 inch
Coal	15 inches	13 inches

(2) is a reported section.

In bore-hole at Mary Lee Mines.

Coal	22 inches
Shale, sandstone	30 inches
Coal	2 inches
Shale, sandy	14 feet 5 inches
Coal (Murphy Seam)	9 inches

In reported bore-hole in N. W. ¼ of S. W. ¼ of S. 17, T. 16, R. 2 W.

Coal	2 inches
Shale	5 feet 2 inches
Coal	8 inches
Shale	17 feet 10 inches

	Coal	6 inches
	Shale	1 inch
	Coal	3 inches
	Shale	½ inch
	Coal	1½ inches
	Clay	4 inches
	Coal	8 inches
	Shale	21 feet 8 inches
Murphy Seam	*Coal,* clean	1 foot 5 inches
	Clay	3 feet 10 inches
	Coal	10 inches

In this last bore-hole, the *Jefferson Coal Seam* is split into five parts and comprises nearly 50 feet of strata.

In the N. E. ¼ of S. W. ¼ of S. 17, T. 16, R. 2 W.

Shale	
Shale, black, with thin *coal seams*	8 inches
Coal	2 inches
Shale, clayey	1 to 2 inches
Coal	7 inches

Fig.6

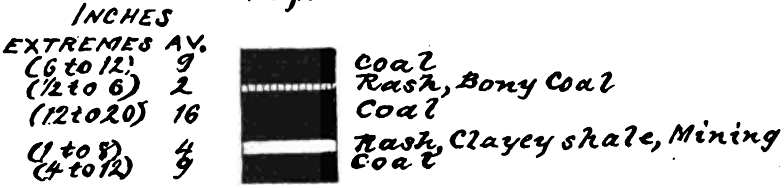

FIG. 6. *Average Section of the* Jefferson Coal Seam *in the eastern part of the Warrior Coal Field.*

In reported bore-hole near New Castle.

Coal	22 inches
Shale	36 inches
Coal	24 inches

In the S. E. ¼ of N. W. ¼ of S. 26, T. 15, R. 2 W.

Sandstone.	
Shale	30 inches
Coal	15 inches
Shale	4 inhes
Coal	18 inches

In the S. W. ¼ of S. W. ¼ of S. 13, T. 15, R. 2 W.

Shale.	
Coal	13 inches
Shale, clayey	4 inches
Coal	14 inches

In the N. W. ¼ of S. E. ¼ of S. 11, T. 15, R. 2 W.

Coal	18 inches
Shale, clayey	5 to 6 inches
Coal	18 inches

In the N. W. ¼ of N. E. ¼ of S. 11, T. 15, R. 2 W.

Shale.	
Coal	18 inches
Clay	32 inches
Coal	2 inches
Clay	6 ncheis
Coal	11 inches
Clay	12 inches

In the N. W. ¼ of N. E. ¼ of S. 25, T 14, R. 2 W.

Shale	
Coal smut	10 inches
Shale, clayey	8 inches
Coal smut	6 inches

In the S. W. ¼ of S. E. ¼ of S. 34, T. 13, R. 2 W.

Coal smut and Shale in streaks	14 inches

In the N. W. ¼ of S. E. ¼ of S. 34, T. 13, R. 2 W.

Coal	9 inches

In the N. W. ¼ of N. E. ¼ of S. 8, T. 14, R. 2 W.

Coal	14 inches

In the N. W. ¼ of S. W. ¼ of S. 29, T. 14, R. 2 W.

Shale	
Coal	6 to 9 inches
Shale	2 to 3 inches
Coal	9 to 14 inches

In the S. W. ¼ of N. E. ¼ of S. 12. T. 14. R. 3 W.

Sandstone.	
Coal	13 inches
Black Band	23 inches
Coaly Black Band	4 inches
Shales, sandstones	18 feet
Coal, Black Creek Seam .	

In the S. E. ¼ of N. W. ¼ of S. 12, T. 14, R. 3 W.

Sandstones.	
Shales	18 inches
Coal	6 inches
Shale	1 to 2 inches
Coaly Black Band	16 inches
Shale, coaly and bituminous	2 inches
Shale	20 inches
Coal, Black Creek Seam.	

At the *Pierce and Hoene old mines*, the *Jefferson* and *Black Creek* coal seams are together, see section under Black Creek Seam.

In the S. E. ¼ of N. E. ¼ of S. 14, T. 14, R. 3 W.

Shale, visible	50 feet
Coal, slaty	5 inches
Shale	1 to 2 inches
Black Band, coaly	21 inches
Shale, ferruginous	40 to 42 inches
Coal, Black Creek Seam .	

Reported section of Shaft in Warrior.

	Shale, sandstone	144 feet
(4.)	*Coal*	24 inches
	Shale	18 feet
(3.)	*Coal*	12 inches
	Shale	16 feet
(2.)	*Coal*	30 inches
	Sandstone, clay	20 feet
(1.)	*Coal*	30 inches

The bottom of the shaft is at (2), the coal mined in shaft; (1) was reached by a bore-hole in bottom of shaft. The *Black Creek Seam* must be (1); the *Murphy Seam* (corresponding to *black-band ore* or bottom part of *Jefferson Seam)* must be (2); the *upper part* of *Jefferson Seam,* (3); and the *Lick Creek Seam* (4).

In the *Brake old mine* in the S. E. ¼ of N. E. ¼ of S. 26. T. 14. R. 3 W.

Shale, clayey	
Coal	9 to 12 inches
Rash (slaty coal)	1 to 2 inches
Coal	18 to 20 inches
Clayey shale, mining	8 inches
Coal	11 to 12 inches
Shale, clayey	

In the *Jefferson Old Mine* in the S. E. ¼ of N. E. ¼ of S. 35, T. 14, R. 3 W.

Shale	32 feet
Coal	6 to 8 inches
Rash (*bony coal*)	3 to 6 inches
Coal	12 to 14 inches
Rash (*slaty coal*)	4 to 6 inches
Coal	4 to 10 inches
Clay	24 inches

In the *Watts (Fidelity) Mine* in the S. W. ¼ of S. E. ¼ of S 27, T. 14, R. 3 W.

Sandstones	
Shales	36 to 42 inches
Pyrite, only in places, in streaks	
Rash (bony coal) in places, black shales in other places	½ to 2 inches
Coal	14 to 16 inches
Rash in places, clay slate in other places	1 to 2 inches
Coal	7 to 9 inches
Clay shale, very hard	

In Drift No. 1 of these mines, the coal seam thickens up in places in the marshes and troughs to some 48 inches and thins down to only 14 inches in places on the crests of the waves.

In the N. W. ¼ of S. E. ¼ of S. 11, T. 16, R. 5 W.

Coal	3 inches
Shale	3 inches
Coal	3 to 4 inches
Shale	3 inches
Coal, about	30 inches

In northern part of S. W. ¼ of S. 11, T. 16, R. 5 W.

Shales	
Coal	2 inches
Shale	3 inches
Coal	20 inches
Shale, some	10 feet
Coal,	8 inches
Shale	1 inch
Coal	6 inches
Shale.	

In the N. W. ¼ of N. E. ¼ of S. 10, T. 16, R. 5 W.

Shale	
Coal	3 inches
Shale	2 inches
Coal	3 inches
Shale	12 inches
Coal	19 inches

On the K. C., M. & B. Ry., in southern part of S. W. ¼ of S. W. ¼ of S. 10, T. 10, R. 5 W.

Coal	1 inch
Shale	1 inch
Coal with streaks of shale	2 to 3 inches
Coal	18 inches
Shale. blue and clayey	12 inches
Coal and shale mixed	3 to 4 inches

In the S. W. ¼ of N. W. ¼ of S. 15, T. 16, R. 5 W.

Coal	18 inches
Shale, clayey	8 inches
Coal, reported	18 inches

In S. W. corner of N. E. ¼ of S. 16, T. 16, R. 5 W.

Coal	19 inches
Shale	3 inches
Coal	13 to 14 inches

In the N. W. ¼ of N. E. ¼ of S. 17, T. 16, R. 5 W.

Coal, reported	5 to 6 inches
Debris, shale, a few feet	
Coal, with a couple of shaly streaks	5 inches
Shale	2 inches
Coal	3 inches
Shale	1 inch
Coal	3 to 4 inches

In the S. E. ¼ of N. E. ¼ of S. 32, T 15, R. 5 W.

Shale	
Coal	6 inches
Shale, clayey	10 inches
Coal	6 inches
Shale, clayey	3 to 4 inches
Coal	4 inches
Shale, clayey	7 inches
Coal	5 inches
Ironstone, shaly	8 inches
Shale, clayey	

In the S. W. ¼ of S. W. ¼ of S. 8, T. 14, R. 4 W.

Coal	30 inches

Reported Section, by Mr. H. W. Milner, in the S. W. ¼ of N. W. ¼ of S. 2, T. 14, R. 5 W.

Coal	8 inches
Cannel Coal	26½ inches

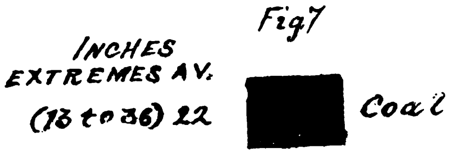

FIG. 7.—*Average Section of the* Jefferson Coal Seam *in the central part of the Warrior Coal Field, along the Black Warrior River.*

In the N. W. ¼ of S. W. ¼ of S. 18, T. 14, R. 5 W.

Coal	30 inches

In the N. W. ¼ of S. W. ¼ of S. 16, T. 14, R. 5 W.

Coal	18 inches

In the N. W. ¼ of N. W. ¼ of . 21, T. 14, R. 5 W.

Shales	
Coal	9 inches
Shale, black, bituminous, with *coal streaks*	11 inches
Clay	

Reported by H. W. Milner, in N. E. ¼ of S. E. ¼ of S. 22, T. 14, R. 5 W.

Coal	30 inches

In the S. W. ¼ of S. W. ¼ of S. 18, T. 14, R. 5 W.

Coal	13 inches.

In bore-hole in S. E. ¼ of S. E. ¼ of S. 12, T. 15, R. 6 W.

Coal, reported	36 inches

In reported bore-hole in N. E, ¼ of S. W. ¼ of S. 9, T. 15, R. 6 W.

Coal	1 inch
Shale	21 inches
Coal	37 to 38 inches
Shale	14 feet 10 inches
Coal	9 inches

In the S. E. ¼ of N. W. ¼ of S. 23, T. 14, R. 6 W.

Shales	
Coal	13 inches
Shale	12 inches
Coal	3 inches

In the N. W. ¼ of S. W. ¼ of S. 8, T. 14, R. 6 W.

Coal, reported	30 inches.

In the S. E. ¼ of N. E. ¼ of S. 12, T. 14, R. 6 W.

Coal	25 inches.

In the N. E. ¼ of N. E. ¼ of S. 1, T. 14, R. 6 W.

Coal	15 inches

In the S. W. ¼ of N. W. ¼ of S. 16, T. 13, R. 6 W.

Coal	30 inches.

In the N. E. ¼ of S. W. ¼ of S. 8, T. 13, R. 6 W.

Coal	36 inches.

In the N. W. ¼ of S. W. ¼ of S. 8, T. 13, R. 6 W.

Coal ....24 inches.

In the N. E. ¼ of S. W. ¼ of S. 9, T. 13, R. 6 W.

Coal ....24 inches.

In the N. E. ¼ of N. E. ¼ of S. 8, T. 13, R. 6 W.

Coal ....24 inches.

In the S. E. ¼ of S. E. ¼ of S. 12, T. 13, R. 7 W.

Coal ....24 inches

In the N. W. ¼ of S. E. ¼ of S. 22, T. 12, R. 7 W.

Coal ....10 inches

In the S. E. ¼ of N. W. ¼ of S. 15, T. 12, R. 7 W.

Coal ....12 inches

In the S. E. ¼ of S. W. ¼ of S. 29, T. 12, R. 7 W.

Coal ....10 inches

In the N. W. ¼ of S. W. ¼ of S. 29, T. 12, R. 7 W.

Coal ....10 inches

In the N. W. ¼ of S. E. ¼ of S. 19, T. 12, R. 7 W.

Coal ....10 inches

In the N. W. ¼ of N. E. ¼ of S. 30, T. 12, R. 7 W.

Coal ....20 inches

In the S. W. ¼ of N. E. ¼ of S. 31, T. 12, R. 7 W.

Coal ....15 inches

In the N. E. ¼ of N. E. ¼ of S. 6, T. 13, R. 7 W.

Coal ....15 inches

In the N. E. ¼ of N. E. ¼ of S. 30, T. 13, R. 7 W.

Coal ....18 inches

In the N. W. ¼ of N. E. ¼ of S. 30, T. 13, R. 7 W.

Coal ....18 inches

In reported bore-hole at Jasper, S. 16, T. 14, R. 7 W.

Coal ....21 inches

In the N. E. ¼ of S. W. ¼ of S. 23, T. 13, R. 8 W.

Coal ....24 inches

In reported bore-hole in S. 21, T. 13, R. 8 W.

Coal and slate ....31 inches

In the S. E. ¼ of S. E. ¼ of S. 2, T. 13, R. 8 W.

Coal ....24 inches

In the S. E. ¼ of N. W. ¼ of S. 2, T. 13, R. 8 W.

Coal ....24 inches

In the N. E. ¼ of N. E. ¼ of S. 1, T. 13, R. 8 W.

Coal ....36 inches.

In the S. W. ¼ of S. W. ¼ of S. 36, T. 12, R. 8 W.

Coal ....36 inches.

In the N. E. of N W. ¼ of S. 34, T. 12, R. 8 W.

Coal ....12 inches

In the S. E. ¼ of S. W. ¼ of S. 27, T. 12, R. 8 W.

Coal ....12 inches

In the N. E. ¼ of N. E. ¼ of S. 24, T. 12, R. 8 W.

Coal ....19 inches

In the N. E. ¼ of N. E. ¼ of S. 28, T. 12, R. 8 W.

Coal ....18 inches

In the N. E. ¼ of N. W. ¼ of S. 33, T. 12, R. 8 W.

Coal ....18 inches

In the N. E. ¼ of N. E. ¼ of S. 32, T. 12, R. 8 W.

Coal ....28 inches.

In the N. E. ¼ of S. W. ¼ of S. 32, T. 12, R. 8 W.

Coal ....28 inches

In the S. W ¼ of S. W. ¼ of S. 16, T. 13, R. 8 W.

Coal, reported ....24 inches

In the N. W. ¼ of S. E. ¼ of S. 6, T, 13, R. 8 W.

Coal ....38 inches

In the S. W. ¼ of S. W. ¼ of S. 31, T. 12, R. 8 W.

Coal ....24 inches

In the S. E. ¼ of S. W. ¼ of S. 25, T. 12, R. 9 W.

Coal ....36 inches.

In the N. W. ¼ of N. E. ¼ of S. 22, T. 12, R. 9 W.

Coal ....38 inches

In Tupelo Mines, Drift No. 1, in the N. W. ¼ of S. W. ¼ of S. 21, T. 12, R. 9 W.

Shales, visible for about	38 feet
Coal	30 inches
Clay (muck)	6 inches
Coal	6 inches
Clay (muck)	4 to 5 feet

In Tupelo Mines, Drift No. 2, in the S. E. ¼ of S. E. ¼ of S. 20, T. 12, R. 9 W.

Coal, on outcrop ....26 to 28 inches

In reported bore-hole in S. W. ¼ of S. 10, T. 14, R. 8 W.

Coal ....24 inches

In reported bore-hole in S. W. ¼ of S. E. ¼ of S. 33, T. 12, R. 9 W.

Coal ....22 inches.

In the S. W. ¼ of S. E. ¼ of S. 6, T. 13, R. 9 W.

Sandstone, bluff.	
Shale	2 to 5 feet
Coal	33 to 36 inches
Shale, clayey, with *coal* streaks	few inches
Coal	¼ inch

In reported bore-hole in N. E. ¼ of N. W. ¼ of S. 14, T. 13, R. 10 W.

Coal	30 inches

The "*Elk River Coal*" in *Galloway Mines* (*Shaft*) in the S. E. ¼ of S. W. ¼ of S. 12, T. 13, R. 10 W.

Coal, reported	18 to 34 inches

In a reported bore-hole in the N. E. ¼ of N. W. ¼ of S. 14, T. 13, R. 10 W.

Coal	30 inches

In a reported bore-hole in the N. E. ¼ of N. E. ¼ of S. 23, T. 13, R. 10 W.

Sandstone, fine grit.	
Coal, slaty	6 inches
Coal, clean	26 inches
Parting	½ inch
Coal, clean	9 inches

Outcrop in the N. W. ¼ of N. E. ¼ of S. 25, T. 12, R. 10 W.

Coal	17 inches

In the S. W. ¼ of N. W. ¼ of S. 25, T. 12, R. 10 W.

Coal	16 inches

In the S. E. ¼ of N. E. ¼ of S. 26, T. 12, R. 10 W.

Coal	16 inches

In the S. W. ¼ of S. W. ¼ of S. 27, T. 12, R. 10 W.

Coal	37 inches

In the S. W. ¼ of S. W. ¼ of S. 22, T. 12, R. 10 W.

Coal	37 inches

In the S. W. ¼ of S. E. ¼ of S. 22, T. 12, R. 10 W.

Coal	37 inches

In the S. E. ¼ of S. E. ¼ of S. 15, T. 12, R. 10 W.

Coal ....34 inches

In the S. E. ¼ of S. E. ¼ of S. 10, T. 12, R. 10 W.

Coal ....24 inches

In the N. W. ¼ of N. W. ¼ of S. 15, T. 12, R. 10 W.

Coal ....18 inches

In the S. W. ¼ of N. E. ¼ of S. 6, T. 12, R. 9 W.

Coal ....18 inches

In the S. W. ¼ of S. E. ¼ of S. 35, T. 11, R. 10 W.

Coal ....29 inches.

In the S. E. ¼ of N. E. ¼ of S. 34, T. 11, R. 10 W.

Coal smut ....18 inches

At *Drifts (Natural Bridge)* in the N. E. ¼ of N. E. ¼ of S. 17, T. 11, R.10 W.

Coal ....29 inches.

In the S. W. ¼ or S. E. ¼ of S. 8, T. 11, R. 10 W.

Coal ....20 inches

In the S. E. ¼ of S. W. ¼ of S. 8, T. 11, R. 10 W.

Coal ....26 inches

In the N. W. ¼ of N. W. ¼ of S. 8, T. 11, R. 10 W.

Coal ....26 inches

In Drifts in S. W. ¼ of S. E. ¼ of S. 29, T. 10, R. 10 W.

Coal ....30 inches

In *Drift at Delmar* in the N. W. ¼ of S. E. ¼ of
S. 20, T. 10, R. 10 W.

Coal ....30 inches

In the S. W. ¼ of S. W. ¼ of S. 1, T. 12. R. 11 W.

Coal ....31 inches

In the S. W. ¼ of S. E. ¼ of S. 3, T. 12, R. 11 W.

Coal ....32 inches

In the N. E. ¼ of S. W. ¼ of S. 14, T. 12, R. 11 W.

Coal ....33 inches.

In the N. W. ¼ of N. W. ¼ of S. 24, T. 12, R. 11 W.

Coal ....28 inches

In the N. E. ¼ of N. W. ¼ of S. 20, T. 12, R. 10 W.

Coal ....38 inches

In the S. E. ¼ of S. E. ¼ of S. 18, T. 12, R. 10 W.

Coal ....20 inches

In the S. E. ¼ of N. W. ¼ of S. 26, T. 12, R. 11 W.

Coal ....21 inches

Fig.8

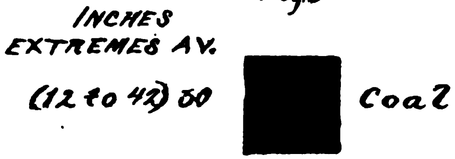

FIG. 8. *Average Section of the* Jefferson Coal Seam *in the western part of the Warrior Coal Field.*

In the N. W. ¼ of S. W. ¼ of S. 26, T. 12, R. 11 W.

Coal ....28 inches

In the N. E. ¼ of S. W. ¼ of S. 26, T. 12, R. 11 W.

Coal ....26 inches

In the S. E. ¼ of S. E. ¼ of S. 27, T. 12, R. 11 W.

Coal ....28 inches

In the N. E. ¼ of S. E. ¼ of S. 34, T. 12, R. 11 W.

Coal ....38 inches

In the S. E. ¼ of S. W. ¼ of S. 34, T. 12, R. 11 W.

Coal ....28 inches

In the S. W. ¼ of S. W. ¼ of S. 34, T. 12, R. 11 W.

Coal ....27 inches.

In the S. E. ¼ of S. E. ¼ of S. 33, T. 12, R. 11 W.

Coal ....30 inches

In the N. W. ¼ of S. E. ¼ of S. 28, T. 12, R. 11 W.

Coal ....30 inches

In the N. E. ¼ of S. E. ¼ of S. 28, T. 12, R. 11 W.

Coal ....30 inches

In the N. W. ¼ of N. E. ¼ of S. 29, T. 12, R. 11 W.

Coal ....29 inches.

In the N. E. ¼ of S. E. ¼ of S. 19, T. 12, R. 11 W.

Coal ....30 inches

In the N. W. ¼ of N. E. ¼ of S. 19, T. 12, R. 11 W.

Coal ....31 inches

In the S. E. ¼ of N. E. ¼ of S. 23, T. 12, R. 12 W.

Coal ....30 inches

In the N. W. ¼ of N. E. ¼ of S. 23, T. 12, R. 12 W.

Coal ....27 inches.

In the S. W. ¼ of N. W. ¼ of S. 13, T. 12, R. 12 W.

Coal ....29 inches

In the S. W. ¼ of S. W. ¼ of S. 12, T. 12, R. 12 W.

Coal ....33 inches

In the N. E. ¼ of S. E. ¼ of S. 11, T. 12, R. 12 W.

Coal ....33 inches

In the S. E. ¼ of S. W. ¼ of S. 11, T. 12, R. 12 W.

Coal ....29 inches

In the S. W. ¼ of S. E. ¼ of S. 4, T. 12, R. 11 W.

Coal ....30 inches

In the N. W. ¼ of S. W. ¼ of S. 4, T. 12, R. 11 W.

Coal ....33 inches

In the N. E. ¼ of S. E. ¼ of S. 5, T. 12, R. 11 W.

Coal ....42 inches

In the N. W. ¼ of S. E. ¼ of S. 1, T. 12, R. 12 W.

Coal ....25 inches.

In the N. W. ¼ of S. W. ¼ of S. 1, T. 12, R. 12 W.

Coal ....28 inches

In the N. W. ¼ of N. E. ¼ of S. 2, T. 12, R. 12 W.

Coal ....33 inches

Jefferson Coal Seam in Drill Holes in Marion County, reported by Maj. G. D. Fitzhugh.

In the N. W. ¼ of N. W. ¼ of S. 36, T. 12, R. 12 W.

Coal ....32 inches.

In the N. E. ¼ of S. W. ¼ of S. 12, T. 12, R. 12 W.

Coal ....18 inches

In the S. W. ¼ of S. E. ¼ of S. 6, T. 12, R. 11 W.

Coal ....12 inches

In the S. E. ¼ of S. E. ¼ of S. 13, T. 12, R. 12 W.

Coal ....30 inches

In the N. E. ¼ of N. E. ¼ of S. 32, T. 12, R. 12 W.

Coal	36 inches.

In the N. W. ¼ of S. E. ¼ of S. 27, T. 12, R. 12 W.

Coal	30 inches

In the N. E. ¼ of S. W. ¼ of S. 27, T. 12, R. 12 W.

Coal	32 inches

In the N. W. ¼ of N. E. ¼ of S. 33, T. 12, R. 12 W.

Coal, with streaks of *pyvrite*	33 inches

In the S. W. ¼ of N. E. ¼ of S. 33, T. 12, R. 12 W.

Coal	3 inches
Shale, with *coal* streaks	8 feet 6 inches
Coal	3 inches
Shale, with *coal* ctreaks	5 feet 4 inches
Coal	38 inches

In the N. W. ¼ of S. W. ¼ of S. 34, T. 12, R. 12 W.

Coal	18 inches
Shale, bluish	3 inches
Coal	3 inches

In the N. W. ¼ of S. W. ¼ of S. 33, T. 12, R. 12 W.

Coal	30 inches

In reported bore-hole, by Mr. T. H. Aldrich, in the N. E. ¼ of N. E. ¼ of S. 15, T. 12, R. 12 W.

Coal	30 inches

The Lick Creek Coal Seam.

This coal seam in its outcrops is thin and usually has one or more shale partings. It is thickest in the eastern part of the field, thinning out towards the west and eventually dying out completely near the western edge of the field. It cannot be said to be workable in a single place seen, though it has been worked a little by a drift on Lick Creek, not far from the Jefferson Old Shaft.

OUTCROPS OF THE LICK CREEK COAL SEAM.

IN THE LITTLE BASIN.

In the S. E. ¼ of S. W. ¼ of S. 5, T. 20, R. 5 W.

Coal	¼ inch
Shale	1 inch
Coal	1 inch
Shale	1 to 2 inches
Coal	2 inches
Shale	¼ inch
Coal	1 inch
Shale	6 to 7 inches
Coal	5 to 6 inches
Shale	10 feet
Coal	3 inches

In the N. W. ¼ of N. W. ¼ of S. 30, T. 19, R. 5 W.

Coal	4 inches
Shale	1 inch
Coal	5 inches

In the S. W. ¼ of S. W. ¼ of S. 25, T. 19, R. 6 W.

Coal smut	7 to 8 inches
Shale	2 to 3 inches
Coal smut	3 to 4 inches

IN THE BIG BASIN.

In the N. W. ¼ of N. E. ¼ of S. 19, T. 20, R. 6 W.

Coal	10 to 12 inches

In the S. E. ¼ of N. E. ¼ of S. 34, T. 19, R. 6 W.

Coal	6 to 8 inches

In the S. W. ¼ of N. E. ¼ of S. 19, T. 19, R. 5 W.

Coal	12 inches

At old Coalburg in the N. W. ¼ of S. E. ¼ of S. 30,

Coal	20 inches

In reported bore-hole in N. W. ¼ of S. W. ¼ of S. 17, T. 16, R. 2 W.

Coal	9½ inches

At New Castle in S. E. ¼ of N. W. ¼ of S. 17,
T. 16, R. 2 W.

Coal	18 inches

In the S. W. ¼ of S. E. ¼ of S. 14, T. 14, R. 2 W.

Coal smut	12 inches

At Coaldale in the N. W. ¼ of S. E. ¼ of S. 7,
T. 14, R. 2 W.

Coal smut	2 inches
Shale	2 inches
Coal smut	4 inches

In E. ½ of N. E. ¼ of S. 14, T. 14, R. 3 W

Coal	11 to 12 inches
Clay	9 inches
Coal, shaly	2 inches

Fig. 9

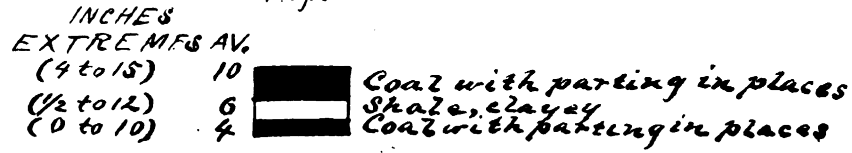

FIG. 9. *Average Section of the* Lick Creek Coal Seam *in the eastern part of the Warrior Coal Field.*

In the S. W. ¼ of N. W. ¼ of S. 13, T. 14, R. 3 W.

Shales.	
Clay	3 to 4 inches
Coal	11 to 12 inches
Clay	9 inches
Coal, with slaty streaks	2 inches

In the N. W. ¼ of S. W. ¼ of S. 13, T. 14, R. 3 W.

Shale	
Coal	14 inches
Clay, bluish	6 to 8 inches
Coal	2 inches

In *Shaft at Warrior* in the S E. ¼ of S. W. ¼ of S. 13, T. 14, R. 3 W.

Coal, reported	24 inches

In the S. W. ¼ of N. E. ¼ of S. 23, T. 14, R. 3 W.

Shales, very thick.	
Coal smut	4 inches
Shale	2 inches
Coal smut	7 inches
Clay	11 inches
Coal smut	4 inches

In *Brake's Old Slope* in S. E. ¼ of N. E. ¼ of S. 26, T. 14, R. 3 W.

Shale	
Coal	10 inches
Shale	1 to 2 inches
Coal	10 inches
Shale	

In *Jefferson Old Shaft* in S. E. ¼ of N. E. ¼ of S. 35, T. 14, R. 3 W.

Coal, reported, with clay parting near center	18 inches

On *Lick Creek* in S. W. ¼ of N. W. ¼ of S. 36, T. 14, R. 3 W.

Debris	
Coal smut	6 inches
Shale	3 inches
Coal smut	5 to 6 inches
Shale	12 inches
Coal smut	6 inches
Shale	1 inch
Coal smut	2 to 3 inches
Shale, visible	24 inches

In the N. E. ¼ of S. W. ¼ of S. 11, T. 16, R. 5 W.

Coal	20 inches

In the S. E. ¼ of N. E. ¼ of S. 10, T. 16, R. 5 W.

Coal	8 inches

On the K. C., M. & B., R'y. in N. W. ¼ of S. 15, T. 16, R. 5 W.

Sandstones, flaggy.	
Shales, with iron concretions	12 feet
Coal	9 inches
Clay	12 inches
Coal	¼ inch

On Rock Creek in S. W. ¼ of S. E. ¼ of S. 15, T. 16, R 5 W.

Sandstone	
Coal	6 inches
Shale	½ inch
Coal	4 inches

In the S. E. ¼ of N. E. ¼ of S. 30, T. 15, R. 5 W.

Shale, visible for	15 feet
Coal smut	6 inches
Shale	½ inch
Coal smut	1 to 2 inches
Clay	

In the N. E. ¼ of S. W. ¼ of S. 30, T. 14, R. 5 W.

Coal smut	6 inches

In the N. W. ¼ of N. E. ¼ of S. 2, T. 15, R. 6 W.

Coal smut	6 inches

In bore-hole in S. E. ¼ of S. E. ¼ of S. 12, T. 15, R. 6 W.

Coal, reported nearly	36 inches

In the S. W. ¼ of N. W. ¼ of S. 34, T. 14, R. 6 W.

Coal smut	6 inches

In the S. E. ¼ of N. W. ¼ of S. 23, T. 14, R. 6 W

Coal smut	12 inches

In the N. W. ¼ of S. W. ¼ of S. 18, T. 14, R. 5 W.

Coal smut	4 inches

In reported bore-hole in N. W. ¼ of N. E. ¼ of S. 18, T. 14, R. 7 W.

Coal	4 inches

In the N. E. ¼ of S. 9, T. 14 R. 8 W.

Coal	4 inches

In the N. W. ¼ of N. E. ¼ of S. 9, T. 14, R. 6 W.

Coal .... 6 inches

In bore-hole in N. E. ¼ of N. E. ¼ of S. 23, T. 13, R. 10 W.

Coal, reported ....12 inches

Near center of S. E. ¼ of S. 8, T. 13, R. 8 W.

Coal, reported in well ....12½ inches

In N. W. ¼ of S. E. ¼ of S. 8, T. 13, R. 8 W.

Coal, reported in well .... 8 inches

To the west, this seam of coal and the strata over it to the next coal seam (the Ream Seam) die out entirely.

CHAPTER III.

THE HORSE CREEK (MARY LEE) GROUP OF COALS.

This important group of coals has usually five coal seams. These seams in an ascending order are the *Ream*, *Jagger*, *Blue Creek*, *Horse Creek* (*Mary Lee*), and *New Castle* seams. See general sections, Plates 1 and 3, and Map. Two of these seams, the Jagger and Blue Creek, are in places within a few feet of each other, and it may be that in other places they are close enough together to be counted, strictly speaking, as one seam. In other places, one or more of the seams of the group are very thin and seemingly sometimes entirely wanting. In still other places, the Ream Seam is split up into several distinct seams through some fifty feet of strata. See Plate 3. None of the seams of the group in the western part of the field, west of Eldridge, are of workable thickness on the outcrops. In places in the north-east part of the field, the coal of the Blue Creek Seam is partly or wholly supplanted by *black band iron ore.*

This is the top group of coals in the Little Basin. Its outcrops have been traced all around the Little Basin, with the exception of the south-west end where they can't be found. In the Big Basin, its most south-western visible outcrops are in S. 32, T. 21, R. 7 W., though they are hid, except along the creeks and branches, to the north-east to near Davis Creek, where they begin and continue to show up by Yolande and Connellsville to across Valley Creek to Black Creek to where they become engulfed in a fault for some 5 to 6 miles to the north-east. They are next recognized a short distance to the north-east of Dolomite and may be continuous then on to the north-east, though no attempt has been made to trace them from near Slope 5 to just beyond Slope 1, Pratt mines. They may be partly, at least, engulfed in a fault in this gap of about 5 miles, as they would be close to the edge of the field, bounded by a big fault. From near Pratt Mines, they have been traced up by the Snake, Black Diamond, Morrow, Mary Lee, and New Castle mines, and on up to and down Turkey Creek to Morris, down the Locust Fork by Little Warrior, Bessie, and Palos mines; thence down to the mouth of Village Creek and up on the north-west side of the Blountsville Anticlinal, by Horse Creek on to near the Mulberry Fork; thence down the Black Warrior River on the east side to below Cordova, and up the river on the west side to Bartonville; thence southward back to near Cordova and up Cane Creek, on the south side, by the Calumet Mine and on to the Gamble Mines;

thence on down by Holly Grove and up Lost Creek, on the south side, by the Pocahontas and Chickasaw Mines; and thence across Lost Creek up by the Galloway Mines and across the country to Eldridge, Texas P. O. and Windfield.

Between Texas and Windfield, however, their outcrops, thin, are covered up by superficial deposits, except along and near the water courses.

The sinuous line connecting the outer outcrops of the *Horse Creek* (*Mary Lee*) *Seam*, the main seam of the group when the whole line of outcrops is considered, must be some 250 miles long, and its lines of outcrops along the creeks, branches, etc., within the above outer line, must add up to a length of some 150 miles more, so it has a total length of outcrops of some 400 miles. It is known to underlie some 2,000 spuare miles of territory in the counties of Jefferson, Walker, Marion, Fayette and Tuscaloosa. The three seams under it of this group would have each, of course, a somewhat longer line of outcrops and larger area, and the one over it, the Newcastle Seam, a somewhat shorter line of outcrops and smaller area.

The Jagger Seam is the main seam of the group at and near Yolande and the Pocahontas, Chickasaw, Carbon Hill, and Galloway Mines; the Blue Creek is the main seam in the Little Basin and at and near Eldridge; the Horse Creek (Mary Lee) at and near the Connellsville, Snake, Black Diamond, Morrow, Mary Lee, Little Warrior, Bessie, Palos, Horse Creek, Cordova, Calumet, Gamble, etc., mines; and the Newcastle at and near Newcastle.

The coals of this group on the outcrops have a combined thickness of from about 3 to 19 feet, with an average thickness of between 9 and 10 feet for the whole lengths of outcrops. Its four uppermost seams are now worked in a commercial way. Three of them had a combined output of 1,389,487 tons of coal in 1898. This output is only second to that of the Pratt Group, though it is only a little more than one-third of that of the Pratt Group.

THE REAM COAL SEAM.

This seam is very variable in its character. It is usually badly split up by shale partings and in many places is divided up into two and in a few places into three distinct seams that are separated from each other by from a few to 25 feet of other strata. These separate seams are themselves in places divided up by shale partings and in places are thick enough to work. The seam, as a whole, is in a few places a fine workable seam, though it thins out towards the west until near the western edge of the field it is usually only a few inches thick. Its workable coal, so far as seen, with one single exception, is in the eastern part of the field. It has never been worked any. Many of the following outcrops are, perhaps, of only a part of the seam.

OUTCROPS OF THE REAM COAL SEAM.

IN THE LITTLE BASIN.

In the N. E. ¼ of N. W. ¼ of S. 22, T. 19, R. 5 W.

Coal	14 inches
Shale	1 inch
Coal	9 inches
Shales and sandstones, about	15 feet
Coal	3 inches

In the N. W. ¼ of S. W. ¼ of S. 16, T. 19, R. 5 W.

Shale	
Coal	6 inches
Shale	9 inches
Coal	5 inches
Shale	1 inch
Coal	4 inches
Shale	6 inches
Coal	10 inches
Clay	

In northern part of N. W. ¼ of S. 30, T. 19, R. 5 W.

Coal, reported with partings	5 feet

In the N. W. ¼ of N. W. ¼ of S. 30, T. 19, R. 5 W.

Coal smut	16 inches
Shale	12 inches
Coal smut	5 inches

In the N. W. ¼ of N. W. ¼ of S. 25, T. 19, R. 6 W.

Coal smut	14 to 16 inches
Shale	48 to 72 inches
Coal smut	1 to 2 inches
Shale	6 to 8 inches
Coal smut	4 to 5 inches
Shale	12 to 15 inches
Coal smut, visible to a depth of	8 inches

In the N. W. ¼ of N. E. ¼ of S. 21, T. 21, R. 7 W.

Sandstone, conglomerate in places	25 eet
Coal	18 inches
Shale	25 eet
Coal smut	40 to 45 inches
Clay	18 inches
Coal smut	1 to 2 inches
Shale, clayey	6 to 7 eet
Coal smut	1 to 2 inches

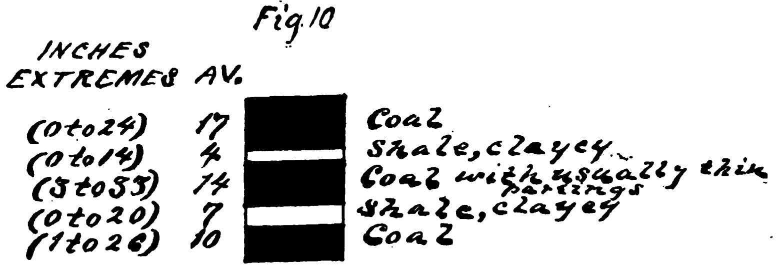

FIG. 10. *Average Section of the better outcrops of the* Ream Coal Seam *in the eastern part of the Warrior Coal Field.*

IN THE BIG BASIN.

In the S. W. ¼ of S. E. ¼ of S. 18, T. 20, R. 6 W.

Sandstone, massive	
Clay	6 inches
Coal	6 inches
Clay	1 to 2 inches
Coal	4 inches
Clay, visible	48 inches

In the S. W. ¼ of N. E. ¼ of S. 34, T. 19, R. 6 W.

Coal	2 to 3 inches
Shale	2 inches
Coal	4 inches
Shale streaks	
Coal	29 inches
Shale streaks	
Coal	26 inches

In the N. E. ¼ of N. E. ¼ of S. 34, T. 19, R. 6 W.

Shale	
Coal smut	12 to 14 inches
Clay	1 to 2 inches
Coal smut	3 to 4 inches
Clay	2 inches
Coal smut	1 to 2 inches
Clay	

In the N. E. ¼ of N. W. ¼ of S. 19, T. 19, R. 5 W.

Shale	
Shale, with thin *coal streaks*	17 inches
Shale	9 inches
Coal smut, with two streaks of shale	11 inches
Coal smut	11 inches
Shale	5 inches
Coal smut, thickening as dug into	9 inches
Clay	

In the N. E. ¼ of S. E. ¼ of S. 19, T. 16, R. 2 W.

Conglomerate.	
Shale, clayey	8 to 10 feet
Coal smut	6 inches
Shale	5 inches
Coal smut	2 inches
Shale, clayey	6 inches
Coal smut	½ inch
Shale	2 inches
Coal smut	3 inches

In reported bore-hole in N. W. ¼ of S. W. ¼ of S. 17, T. 16, R. 2 W.

Coal	2 inches
Shale, sandstone	23 feet 10 inches
Black bituminous shale	6 inches
Coal	8 inches
Sandstone	27 feet
Coal	2 inches

So the *Ream Seam* in this bore-hole is split into three parts and occupies over 53 feet of strata.

In well in N. E. corner of S. 27, T. 15, R. 2 W.

Coal, reported	10 inches

In old shaft in S. E. ¼ of S. E. ¼ of S. 12. T. 15, R. 3 W.

Coal, reported	18 inches

In *Jefferson Old Shaft* in N. E. ¼ of N. E. ¼ of S. 35, T.14, R. 3 W.

Coal, reported	18 inches

The outcrops of this coal seam to the north-east of Morris are thin.

In the S. E. ¼ of S. E. ¼ of S. 23, T. 14, R. 3 W.

Coal smut	12 inches

In the S. W. ¼ of S. E. ¼ of S. 23, T. 14, R. 3 W.

Coal smut	8 inches
Shale, debris	20 feet
Coal smut	1 inch
Clay	1 to 2 inches
Coal	6 inches
Shale	

In the S. W. ¼ of S. W. ¼ of S. 11, T. 16, R. 5 W.

Coal	19 to 20 inches

By the side of the K. C., M. & B. R'y, in the N. W. ¼ of S. E. ¼ of S. 15, T. 16, R. 5 W.

Sandstones	
Shales, about	3 feet
Coal smut	1 inch
Shale	1 inch
Coal smut	½ inch
Shale	1 inch
Coal smut	21 inches
Clay	14 inches
Coal smut	1 inch
Shale	¾ inch
Coal smut	1 inch
Shale	1 inch
Coal smut	7 inches
Shale, clayey	6 inches
Coal smut, about	3 inches
Sandstone	

Several hundred yards south of last outcrop, but in same *forty*.

Coal	24 inches
Shale	12 inches
Coal	18 inches
Shale	20 inches
Coal	8 inches

In the S. W. ¼ of S. E. ¼ of S. 15, T. 16, R. 5 W.

Coal	24 inches

This may be merely the uppermost bench of the coad seam.

On the K. C., M. & B. R'y, in the S. E. ¼ of N. W. ¼ of S. 20, T. 15, R. 5 W.

Coal	24 inches

In reported bore-hole in N. E. ¼ of S. W. ¼ of S. 9, T. 15, R. 6 W.

Coal	5 inches

In reported bore-hole at Jasper, about 100 feet below surface.

Sandstone, with *coal streaks*	9 feet 6 inches

In N. E. ¼ of N. E. ¼ of S. 5, T. 14, R. 7 W.

Coal in thin streaks through a foot of shale.

In reported bore-hole in S. W. ¼ of S. 10, T. 14, R. 8 W.

Coal	7 inches

In reported bore-hole in N. ½ of S. 35, T. 13, R. 8 W.

Coal	5 inches
Shales	147 inches
Shales with thin *coal seams*	106 inches

In reported bore-hole in S. W. ¼ of S. 35, T. 13, R. 8

Coal	6 inches
Shales	25 feet 6 inches
Shaly *coal*	5 feet 3 inches

In reported bore-hole in S. 21, T. 13, R. 8 W.

Coal	7 inches
Shale	13 feet 2 inches
Coal	6 to 7 inches
Shales, about	5 feet
Coal	5 inches

In reported bore-hole near center of S. 30, T. 13, R. 8 W.

Coal and shale, mixed	2 feet 9 inches

In reported bore-hole in N. E. ¼ of S. 25, T. 13, R. 9 W.

Coal	4 inches
Shale, about	7 feet 9 inches
Coal	3 inches

In reported bore-hole in S. E. ¼ of N. E. ¼ of S. 35, T. 13, R. 9 W.

Coal	4 inches
Shale	8 feet 6 inches
Coal	2 inches

In reported bore-hole in N. E. ¼ of N. E. ¼ of S. 2, T. 14, R. 9 W.

Coal	2 inches

In reported bore-hole in S. W. corner of N. W. ¼ of S. 33, T. 13, R. 8 W.

Coal	6 inches
Shales, about	12 feet
Coal	2 feet 4 inches

Outcrops in N. W. corner of S. 35 and S. W. ¼ of S. E. ¼ of S. 26, T. 13, R. 9 W.

Coal	4 inches

This is probably just the top one of perhaps two or more thin seams.

In reported bore-hole in N. E. ¼ of N. W. ¼ of S. 35, T. 15, R. 9 W.

Coal	2 inches

In the S. E. ¼ of N. W. ¼ of S. 25, T. 12, R. 10 W.

Coal	5 to 8 inches

In the S. W. ¼ of S. E. ¼ of S. 21, T. 12, R. 10 W.

Sandstone, massive, with rock-houses	
Coal	10 to 11 inches

In the N. E. ¼ of S. E. ¼ of S. 28, T. 12, R. 10 W.

Sandstones, massive, with rock-houses	
Coal	14 inches

In the S. E. ¼ of N. E. ¼ of S. 29, T. 12, R. 10 W.

Sandstone, massive	
Coal	26 to 27 inches
Shale	18 inches
Coal, shaly, believed to be thin.	

In the S. E. ¼ of N. W. ¼ of S. 27, T. 12, R. 11 W.

Coal	4 inches

In the S. W. ¼ of N. W. ¼ of S. 27, T. 12, R. 11 W.

Sandstone	
Coal	4 to 6 inches
Shale	

Ream Coal Seam in drill holes in Marion County, reported by Maj. G. D. Fitzhugh.

In the S. W. ¼ of S. E. ¼ of S. 6, T. 12, R. 11 W.

Coal, slaty	3 inches

In the S. E. ¼ of S. E. ¼ of S. 13, T. 12, R. 12 W.

Coal	6 inches

In the N. E. ¼ of S. W. ¼ of S. 27, T. 12, R. 1 W.

Coal	6 inches

In the N. W. ¼ of S. W. ¼ of S. 34. T. 12, R. 12 W.

Shale with thin *coal seams*	4 feet

In the drill holes farther west, this coal seam is entirely wanting.

THE JAGGER COAL SEAM.

This coal seam, called also the *Sulphur*, *Dirty*, *Eaton*, etc., seam, varies very much in its thickness and character. In the south-eastern and western parts of the field, it is in places one of the thickest and best seams of the field; in the north-eastern part of the field, it is properly called *the Dirty Seam*, being badly cut up by shale partings; and across the central and along the western edge of the field, it is thin and shaly, being almost if not entirely wanting in places. In the eastern and western parts of the field, it and the overlying seam are in places together or within a few feet of each other. It is mined at Galloway, around Carbon Hill, at Chickasaw and Pocahontas in the western part of the field and was once mined a little near Morris in the eastern part of the field.

It furnished about 322,424 tons of coal output for 1898.

OUTCROPS OF THE JAGGER COAL SEAM.

IN THE LITTLE BASIN.

In the S. W. ¼ of S. W. ¼ of S. 15, T. 20, R. 6 W.

Coal and shale in streaks, about	48 inches

In the S. W. ¼ of S. W. ¼ of S. 6, T. 20, R. 5 W.

Coal	37 inches
Shale	7 inches
Coal	6 inches

In the N. E. ¼ of N. E. ¼ of S. 31, T. 19, R. 5 W.

Shale	
Coal smut	4 to 5 inches
Shale	6 to 10 inches
Coal smut, with perhaps some thin shale seams	36 to 48 inches
Shale	4 to 5 inches
Coal smut	4 inches
Shale	1 inch
Coal smut	12 inches
Clay	36 inches

In the N. W. ¼ of N. W. ¼ of S. 32, T. 19, R. 5 W.

Shale	
Coal smut	52 inches
Shale	12 inches
Coal smut, visible to depth of	5 inches

In the N. W. ¼ of N. E. ¼ of S. 32, T. 19, R. 5 W.

Shale, cover	
Coal smut	27 inches
Shale	streak
Coal smut	6 inches
Shale	¾ inches
Coal smut	13 inches
Shale	2 to 3 inches
Coal smut	11 to 12 inches
Shale	1 to 2 inches
Coal smut	2 to 3 inches
Shale	¾ inches
Coal smut	5 inches
Shale	¾ inches
Coal smut	2 inches
Shale	½ inch
Coal smut	3 inches
Shale	1 to 2 inches
Coal smut	15 inches
Shale	

In the S. W. ¼ of S. W. ¼ of S. 22, T. 19, R. 5 W.

Coal seam, reported, 9 feet thick with 7 feet of coal.

In the N. W. ¼ of S. E. ¼ of S. 19, T. 19, R. 5 W.

Coal	36 inches
Shale	4 inches
Coal	6 inches

A short distance to south-west of last outcrop.

Coal	26 inches
Shale	3 inches
Coal	5 inches

In the N. W. ¼ of S. E. ¼ of S. 25, T. 19, R. 5 W.

Coal smut, visible to depth of	36 inches

IN THE BIG BASIN.

Reported outcrop n N. W. ¼ of S. W. ¼ of S. 19, T. 20, R. 6 W.

Coal	21 inches
Parting	streak
Coal	12 inches
Parting	streak
Coal	36 inches
Parting	2 to 3 inches
Coal	24 inches
Parting	streak
Coal	20 inches
Parting	streak
Coal	12 inches

At the *Kennedy Coal Bed* in N. E. ¼ of N. W. ¼ of S. 19, T. 20, R. 6 W.

Coal, with partings, *Blue Creek Seam,* about	36 inches
Shale, bluish and clayey	4 to 8 feet
Coal	2 to 3 inches
Shale	1 to 3 inches
Coal, with in places two thin shaly streaks near bottom	8 to 11 inches
Shale	½ to 1 inch
Coal, with in places some thin shaly streaks	20 to 22 inches
Shale, clayey	4 to 7 inches
Coal, with in places a shaly streak near top	36 to 42 inches
Shale	4 inches
Coal	13 inches
Shale	

In the N. E. ¼ of N. E. ¼ of S. 18, T. 20, R. 6 W.

Coal, with some thin shale partings	14 inches
Coal	18 inches
Shale	4 inches
Coal, some	60 inches

In the N. W. ¼ of N. W. ¼ of S. 17, T. 20, R. 6 W.

Sandstone	
Shale	30 inches
Coal	2 inches
Shale, clayey	7 inches
Coal	10 inches
Clay	¼ inch
Coal	18 inches
Clay	6 inches
Coal	12 inches
Shale	¼ inch
Coal, visible to a depth of	36 inches

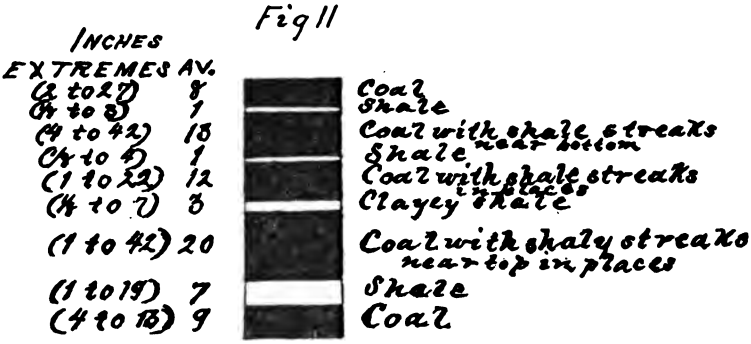

FIG. 11. *Average Section of the* Jagger Coal Seam *along the eastern edge of the Warrior Coal Field.*

In the N. E. ¼ of N. E. ¼ of S. 8, T. 20, R. 6 W.

Coal	6 inches
Shale	2 to 3 inches
Coal	42 inches
Shale streak	
Coal	16 inches
Shale streak	
Coal	37 inches
Clay	19 inches
Coal	9 inches

In other places, this outcrop showed thus

Coal smut	2 inches
Clay	10 to 12 inches
Coal smut with some thin shale streaks	96 to 120 inches

In the N. W. ¼ of N. W. ¼ of S. 3, T. 20, R. 6 W.

Coal smut with one thin shale parting	42 inches

At the *Connellville Old Mine* in N. E. ¼ of N. E. ¼ of S. 33, T. 19, R. 6 W.

Coal (Blue Creek Seam, Connellsville Seam)	
Shale, reported	6 feet
Coal, (Jagger Seam) reported	4 inches

In the S. E. ¼ of N. W. ¼ of S. 19, T. 19, R. 5 W.

Coal, reported about	48 inches

In the N. W. ¼ of N. E. ¼ of S. 19, T. 19, R. 5 W.

Coal	6 inches
Shale	streak
Coal, reported	30 to 42 inches

In reported bore-hole in N. W. ¼ of S. W. ¼ of S. 17, T. 16, R. 2 W.

Coal, mixed with shale	14 inches
Coal, dirty	31 inches

At Newcastle in S. E. ¼ of N. W. ¼ of S. 17, T. 16, R. 2 W.

Coal, reported, with shale partings	57 inches

In the N. E. ¼ of S. W. ¼ of S. 27, T. 15, R. 2 W.

Coal	14 to 15 inches
Black Band Ore	1 inch
Coal	1 to 2 inches
Black Band Ore	1 to 2 inches
Coal	5 inches
Black Band Ore	2 inches
Coal	4 to 5 inches
Shale	1 inch
Coal	½ inch
Shale	¼ inch
Coal	¼ inch
Shale	1 inch
Coal	3 to 4 inches
Shale	4 inches
Coal	4 inches

In the N. E. ¼ of N. W. ¼ of S. 27, T. 15, R. 2 W.

Coal	32 to 33 inches
Shale	1 inch
Coal	1 inch
Shale	¼ inch
Coal	1 to 2 inches
Shale	¼ inch
Coal	3 inches

The outcrops of this coal seam between Turkey and Self creeks, its most north-east outcrops, are thin.

In the N. W. ¼ of S. E. ¼ of S. 26, T. 14, R. 3 W.

Shale with thin *coal seams,* about	6 feet

In the S. W. ¼ of S. E. ¼ of S. 26, T. 14, R. 3 W.

Shale	
Coal smut	2 inches
Shale	8 inches
Coal smut	4 inches
Shale with coal streaks	32 inches
Coal smut	10 inches
Clay	4 inches
Coal smut, visible to depth of	4 inches

In *Jefferson Old Shaft* in S. E. ¼ of N. E. ¼ of S. 35, T. 14, R. 3 W.

Coal with shale partings, reported ....57 inches

In the S. W. ¼ of S. E. ¼ of S. 12, T. 15, R. 3 W.

Coal with shale partings, reported ....57 inches

In the S. E. ¼ of N. W. ¼ of S. 24, T. 15, R. 4 W.

Coal	7 inches
Shale	¼ inch
Coal	1 to 2 inches
Shale	¼ inch
Coal	1 to 2 inches
Shale	8 inches
Coal	1 inch

In the S. W. ¼ of N. E. ¼ of S. 23, T. 15, R. 4 W.

Coal	1 to 2 inches
Shale	¼ inch
Coal	12 inches
Shale	1 inch
Coal	4 inches
Shale	1 inch
Coal	7 to 8 inches

On east side of K. C. M. & B. R'y., in N. W. ¼ of S. E. ¼ of S. 15, T. 16, R.5 W.

Shale	
Coal smut	4 inches
Shale	4 to 5 inches
Coal	3 inches
Shale	9 inches
Coal	5 inches

On west side of K. C. M. & B. R'y, in the same *forty* as last out-cropping.

Shale, visible for	8 to 10 feet
Coal	2 inches
Shale	1 inch
Coal	4 to 5 inches
Shale with *coal streaks*	4 inches
Coal	1 to 2 inches
Shale	½ inch
Coal	1 inch
Shale	1 inch
Coal	1 to 2 inches
Shale	9 inches
Coal	5 to 6 inches

In the S. E. ¼ of S. E. ¼ of S. 31, T. 15, R. 5 W.

Coal .... 19 inches

In the N. E. ¼ of N. E. ¼ of S. 19, T. 15, R. 5 W.

Coal smut	2 to 4 inches

In the N. E. ¼ of N. E. ¼ of S. 23, T. 14, R. 6 W.

Coal smut	2 to 4 inches

In the N. W. ¼ of S. W. ¼ of S. 23, T. 14, R. 6 W.

Shale, thick	
Coal smut	8 inches
Shale	5 inches
Coal and shale	4 inches

In bore-hole in S. E. ¼ of N. W. ¼ of S. 11, T. 14, R. 7 W.

Coal reported rotten and	30 inches thick

In bore-hole in S. E. ¼ of S. 10, T. 14, R. 7 W.

Coal, reported	28 inches

In the S. E. ¼ of N. W. ¼ of S. 15, T. 14, R. 7 W.

Shale	
Coal	7 inches
Shale	8 feet
Coal	4 inches
Shale	4 feet
Coal	4 to 5 inches
Clay	2 to 3 feet

Near center of S. 16, T. 14, R. 7 W.

Mineral charcoal of a peacock luster	5 inches

In northern edge of Jasper in S. W. ¼ of S. E. ¼ of S. 9, T. 14, R. 7 W.

Shale, with *kidney ore* in lower part, visible about	10 feet
Coal, shaly	8 to 9 inches
Shale	3 to 4 feet
Sandstone, bluish gray, quarry rock, visible about	10 feet

In south-west edge of Jasper in S. E. ¼ of N. W. ¼ of S. 16, T. 14, R. 7 W.

Shale, with little ironstone at bottom, visible	15 feet
Coal, shaly	8 inches
Shale	1 inch
Coal	3 to 4 inches
Shale, about	3 feet
Sandstone	

In bore-hole in S. W. ¼ of N. E. ¼ of S. 20, T. 14, R. 7 W.

Shale, bluish	
Coal	3 inches
Shale, bluish	12 feet 5 inches
Coal	5 inches
Shale, bluish	11 feet 6 inches
Coal	10 inches

The coals of this last section represent those of both the *Blue Creek* and *Jagger seams.*

In the S. E. ¼ of S. E. ¼ of S. 8, T. 14, R. 7 W.

Shale	
Coal smut	4 to 6 inches
Shale	1 inch
Coal smut	12 inches
Clay	

In reported bore-hole in S. W. ¼ of S. W. ¼ of S. 26, T. 13, R. 8 W.

Shales with thin *coal seams,*	8 feet 10 inches

In reported bore-hole in the N. E. ¼ of S. W. ¼ of S. 35, T. 13, R. 8 W.

Shaly *coal*	5 feet 3 inches

In reported bore-hole in N. E. ¼ of N. E. ¼ of S. 3, T. 14, R. 8 W.

Coal	10 inches

In reported bore-hole in S. W. ¼ of S. 10, T. 14, R. 8 W.

Coal	7 inches

In reported bore-hole in N. E. ¼ of S. 25, T. 13, R. 9 W.

Coal	8 inches

In reported bore-hole near center of S. 30, T. 13. R. 8 W.

Coal and shale mixed	32 to 33, inches

In reported bore-hole in N. E. ¼ of S. E. ¼ of S. 30, T. 13, R. 8 W.

Coal	18 inches

In reported bore-hole in S. W. ¼ of N. W. ¼ of S. 33, T. 13, R. 8 W.

Coal	28 inches

In reported bore-hole in N. E. ¼ of S. 7, T. 14, R. 8 W.

Coal	15 inches
Coal, rotten	6 inches
Coal	33 inches
Coal, rotten	9 inches.
Clay	

In reported bore-hole in N. W. ¼ of S. 8, T. 14, R. 8 W.

Shale	
Coal (*Mary Lee Seam*)	32 inches
Shale, bluish	15 feet
Coal (*Blue Creek Seam*)	2 feet
Shale	6 inches
Coal	18 inches
Shale	9 inches
Coal (*Jagger Seam*)	15 inches
Clay.	

The *Blue Creek* and *Jagger seams* in this last hole appear to be together.

Outcrop in road in S. W. ¼ of N. E. ¼ of S. 8, T. 14, R. 8 W.

	Shales, sandy	
	Coal and clay, mixed, (*Newcastle Seam*)	2 inches
	Shales, sandy	8 to 10 feet
	Sandstones, shaly	5 to 6 feet
	Shales	8 to 10 feet
	Coal (*Mary Lee Seam*) about	23 inches
	Shales, clayey, about	15 feet
Blue Creek Seam	*Coal*	2 to 3 inches
	Shale	¼ inch
	Coal	13 to 14 inches
	Shale, clayey	4 feet
	Ironstone, in places	1 to 3 inches
	Shale	6 inches
	Coal, shaly, (*Jagger Seam*)	6 inches
	Shale, clayey, for a few feet to sandstones	

In the south-east corner of S. 7, T. 14, R. 8, W.

Coal	7 to 12 inches

In S. E. ¼ of N. E. ¼ of S. 11, T. 14, R. 9 W.

Coal	6 inches

In reported bore-hole in N. W. ¼ of S. 8, T. 14, R. 9 W.

Coal	8 inches

In reported bore-hole in S. E. ¼ of S. W. ¼ of S. 2, T. 14, R 9 W

Coal	18 inches

In the S. W. ¼ of N. E. ¼ of S. 34, T. 13, R. 9 W.

Coal 15 inches

Reported section in *Shaft at Pocahontas Mine* about in the N. W. ¼ of S. E. ¼ of S. 27, T. 13, R. 9 W.

	Shale	
	Coal, (*Blue Creek Seam*)	8 inches
	Shale, sandy	20 feet
Jagger Seam	*Coal*	8 inches.
	Shale	6 inches.
	Coal	44 inches.
	Bone Coal	4 inches.
	Shale.	

In reported bore-hole near center of S. 32, T. 13, R. 9 W.

Coal 39 inches

Reported section of *Chickasaw Shaft* in N. E. ¼ of N. E. ¼ of S. 32, T. 13, R.9 W.

	Soil	12 feet
	Sandstone, bluish, calareous, flaggy	12 feet
	Coal (*Newcastle Seam*)	10 inches
	Clay, hard	3 feet
	Shale	19 feet
	Coal, hard, fine, (*Mary Lee Seam*)	36 inches
	Shale	18 feet
	Coal (*Blue Creek Seam*)	14 inches
	Clay	2 feet
	Shale, very hard	21 feet
Jagger Seam	*Coal*	10 inches.
	Shale	5 inches.
	Coal	42 inches

The *Jagger Seam*, however, is said to have an average thickness of five feet in the mine.

Reported section of *McDonald Shaft* in N. E. ¼ of S. E. ¼ of S. 30, T. 13, R. 9 W.

	Soil	9 feet
	Shale	5 feet
	Coal, (Blue Creek Seam)	14 inches
	Clay and shales	4 feet
	Sandstone	24 feet
	Shale	6 feet
Jagger Seam	*Coal*	7 to 10 inches
	Shale, parting, average about	7 inches
	Coal	38 to 42 inches

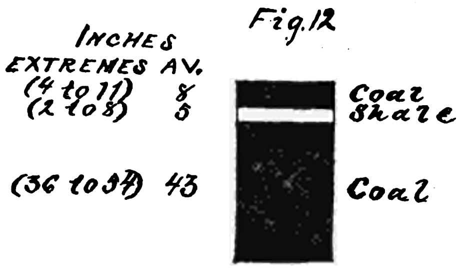

FIG. 12. *Average Section of the* Jagger Coal Seam *near Carbon Hill.*

Outcrop in the N. W. ¼ of S. E. ¼ of S. 30, T. 13, R. 9 W.

Shale	
Coal	10 inches
Shale	2 inches
Coal	48 inches
Shale, clayey	

In reported bore-hole (near fault) in N. W. corner of S. 31, T. 13, R. 9 W.

Coal	7 inches
Shale	8 inches
Coal	12 inches

In reported bore-hole in S. E. ¼ of S. W. ¼ of S. 25, T. 13, R. 10 W.

Coal	5 feet 6 inches

In the *Morris-Goss Drift No. 1* in N. E. ¼ of N. E. ¼ of S. 25, T. 15, R. 10 W.

Coal	6 inches
Shale	6 inches
Coal	48 inches

In the *Morris-Goss Shaft No. 1* in S. E. ¼ of S. W. ¼ of S. 24 T. 13, R. 10 W.

Coal	8 inches
Shale, clayey	8 inches
Coal	36 to 42 inches

In the *Bynum Shaft* in S. E. ¼ of N. W. ¼ of S. 25, T. 13, R. 10 W.

Coal	6 inches
Shale	2 inches
Coal	46 inches

In reported bore hole in S. E. ¼ of S. W. ¼ of S. 25, T. 13, R. 10 W.

Coal, average	54 inches

Outcrop in N. W. ¼ of N. W. ¼ of S. 29, T. 13, R. 9 W.

Coal smut	6 inches
Shale	6 inches
Coal smut	39 inches

In the *Read Drift No. 1* in S. W. ¼ of S. W. ¼ of S. 19, T. 13, R. 9 W.

Coal	4 inches
Shale, clayey	5 inches
Coal	36 inches

In well in N. E. ¼ of N. E. ¼ of S. 24, T. 13. R. 10 W.

Coal, reported	55 inches
Shales and sandstones	5 feet
Coal, just visible, perhaps	12 inches

Outcrop in the N. W. ¼ of N. W. ¼ of S. 23, T. 13, R. 10 W.

Coal smut	10 to 11 inches
Shales, clayey	4 inches
Coal smut	41 inches

In the N. E. ¼ of S. E. ¼ of S. 14, T. 13, R. 10 W.

Coal	6 inchhes
Shale	7 inches
Coal, reported about	96 inches

In reported bore-hole in N. E. ¼ of S. E. ¼ of S. 13, T. 13, R. 10 W.

Coal	7 inches
Shale	5 inches
Coal	54 inches

In reported bore-hole in S. W. ¼ of S. W. ¼ of S. 13, T. 13, R. 10 W.

Coal	8 inches
Shale	4 inches
Coal	40 inches

In *Shaft No. 2*, *Golloway*, S. E. ¼ of S. W. ¼ of S. 12, T. 13, R. 10 W.

Coal	9 inches
Shale	6 inches
Coal	40 inches

Outcrop at the *Jagger Coal Bed* in S. E. ¼ of N. W. ¼ of S. 11, T. 13, R. 10 W.

Coal	7 inches
Shale, clayey	7 inches
Coal	52 inches

In an other place at this old coal bed, there is the following outcroppihg:

Coal, slaty	21 inches
Coal, about	48 inches

This seam is said to be *36 inches thick* in a well in S. 3, T. 13, R. 10 W., and also in a well in S. 32, T. 12, R. 10 W., though the few outcrops that have been seen to the west of the *Jagger Coal Bed* are only from *6 to 9 inches thick* and the seam in several reported bore-holes in the south-east part of Marion County is only from *3 to 12 inches thick.* The seam would therefore appear to suddenly thin out to the west of the old *Jagger Coal Bed.*

THE BLUE CREEK COAL SEAM.

This coal seam, called also the *Black Band Seam,* is of workable thickness in the south-east and north-east parts of the field and around Eldridge in the western part of the field. In the central part of the field, it is only a few inches thick and may be wanting in places; and over most of the western part of the field, it is about 14 inches thick. It is the principle seam of the Little Basin and is the one that is mined at Adger, Johns and Belle Sumter, and was mined some at Shannon, Slope No. 1, and Connellsville. It and the Jagger Seam are together or within a few feet of each other in places in both the eastern and western parts of the field. In the north-eastern part of the field, it is in places partly or wholly a *black band ore,* hence its name, "*Black Band Seam.*" Its coal is coked extensively. It furnished about 685,099 tons of the coal output for 1898.

OUTCROPS OF THE BLUE CREEK COAL SEAM.

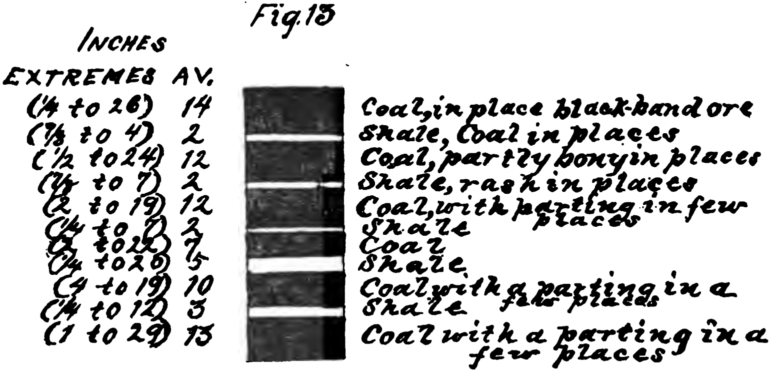

FIG. 13. *Average Section of the* Blue Creek Coal Seam *along the eastern edge of the Warrior Coal Field.*

IN THE LITTLE BASIN.

At Drift *No.* 1 in N. E. ¼ of N. E. ¼ of S. 31, T. 19, R. 5 W.

Coal smut	1 inch
Shale	6 inches
Coal	2 inches
Shale	2 to 3 inches
Coal	12 inches
Shale	2 to 3 inches
Coal	25 inches
Shale	12 inches
Coal	29 inches

In the S. W. ¼ of N. W. ¼ of S. 32, T. 19, R. 5 W.

Coal smut	12 inches
Shale	1 inch
Coal smut	38 inches

This outcrop may not represent the full thickness of the coal and it may be of the underlying *Jagger Seam.*

In the N. E. ¼ of N. W. ¼ of S. 32, T. 19, R. 5 W.

Coal smut	1 to 2 inches
Shale	1 to 2 inches
Coal smut	11 inches
Shale	2 inches
Coal smut	17 inches

This outcrop probably does not represent the full thickness of the coal.

In the N. E. ¼ of N. E. ¼ of S. 28, T. 19, R. 5 W.

Shale	
Coal smut	1 inch
Shale, clayey	1 to 2 inches
Coal smut	10 inches
Shale, clayey	9 inches
Coal smut	20 to 21 inches

In the S. W. ¼ of S. W. ¼ of S. 22, T 19, R. 5 W.

Outcrop reported 9 feet thick with 7 feet of *coal.*

In well in N. W. ¼ of S E. ¼ of S. 16, T. 19, R. 5 W.

Coal, reported	48 inches

In the S. E. ¼ of S. E. ¼ of S. 17, T. 19, R. 5 W.

Shale	
Coal smut	2 inches
Shale	3 inches
Coal smut	12 to 15 inches
Shale	10 inches
Coal smut	42 to 48 inches
Shale	2 to 3 inches
Coal smut, to edge of water	36 inches
Coal under water, unknown thickness.	

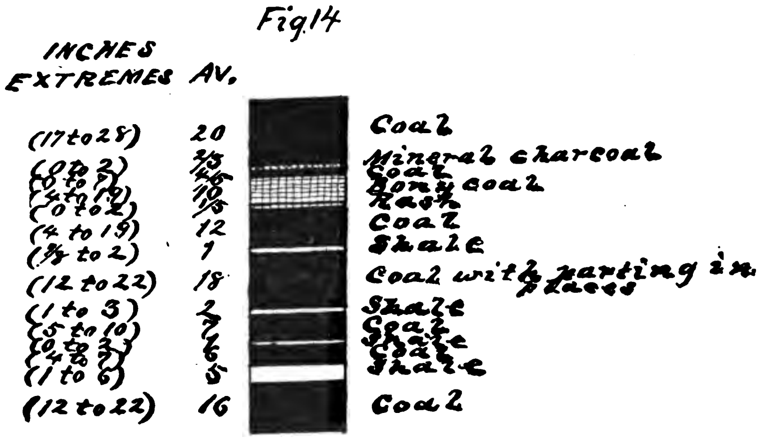

FIG. 14. *Average Section of the actual mining, as reported, in the* Blue Creek Mines *at Adger, Johns and Sumter.*

Reported sections of actual mining in Slope No. 5 (Adger Slope) in the S. E. ¼ of N. W. ¼ of S. 20, T. 19, R. 5 W.

	1	2	3
Shale	4¾ inches	7⅛ inches	12 inches
Coal	16¾ inches	17⅝ inches	18 inches
Smut (min. charcoal)	¼ inches	⅞ inches	1⅛ inches
Coal, bony, gray	10¾ inches	12 inches	10¾ inches
Coal	12 inches	12 inches	12 inches
Shale	1⅛ inches	⅞ inches	1⅛ inches
Coal	16¾ inches	14⅝ inches	16¾ inches
Shale	1⅛ inches	1⅛ inches	1⅛ inches
Coal	4¾ inches	5⅝ inches	6 inches
Shale	⅞ inches	2 inches	2 inches
Coal	5⅝ inches	4¾ inches	4¾ inches
Shale	2¾ inches	1⅛ inches	2⅝ inches
Coal	21⅝ inches	18⅝ inches	18 inches
	98½ nches	97⅝ inches	105¾ inches

(1) Fifth West Heading, Room 11.
(2) Fifth East Heading, Room 14.
(3) Sixth West Heading, Room2.

The entries of this mine curve around the south-west end of an anticlinal.

Outcrop in the S. W. ¼ of S. E. ¼ of S. 19, T. 19, R. 5 W.

Shale	
Coal smut	8 inches
Shale	2 inches
Coal smut	46 inches
Shale	1 to 2 inches
Coal smut	3 inches
Shale	½ inch
Coal smut	4 inches
Shale	1 inch
Coal smut	9 inches
Shale	2 to 3 inches
Coal smut	9 inches

In the N. E. ¼ of N. W. ¼ of S. 30, T. 19, R. 5 W.

Soil	
Coal smut	12 to 13 inches
Shale, clayey	3 inches
Coal smut	40 inches
Shale, clayey	½ inch
Coal smut	4 inches
Shale, clayey	1 inch
Coal smut	15 inches
Shale, clayey	0 to ½ inch
Coal smut	8 inches
Shale, clayey	1 to 2 inches
Coal smut	6 inches
Shale, clayey	1 inch
Coal smut	13 inches
Shale, clayey	2 inches
Coal smut	8 inches
Clay	18 inches

In the N. W. ¼ of S. E. ¼ of S. 25, T. 19, R. 6 W.

Coal smut	1 to 2 inches
Shale	17 inches
Coal smut	8 inches
Shale	30 inches
Coal smut	8 inches
Shale	3 inches
Coal smut	20 inches
Shale	14 inches
Coal smut	6 inches

Reported sections of actual mining in Slope No. 4 (Johns Slope) in the N. W. ¼ of N. W. ¼ of S. 30, T. 19, R. 5 W.

	1	2
Coal	21⅝ inches	26⅜ inches
Smut (mineral charcoal)	⅞ inches	0 inches
Coal, gray	19⅛ inches	4¾ inches
Rash	2 inches	0 inches

(OVER.)

Coal	4¾ inches	19⅛ inches
Shale	1⅛ inches	1¾ inches
Coal	21¾ inches	12 inches
Shale	1⅛ inches	2⅜ inches
Coal	16¾ inches	19⅛ inches
Shale	1⅜ inches	⅝ inches
Coal	12 inches	8⅜ inches
	103⅞ inches	94¾ inches

(1) Seven West Heading, Room 1.
(2) Three West Heading, Room 15.

Reported sections of actual mining in *Slope No. 3* (*Bell Sumter Slope*) in the N. W. ¼ of N. W. ¼ of S. 36, T. 19, R. 6 W.

Coal	18 inches	24 inches	20⅜ inches
Shale	⅝ inches	Smut 1½ inches	0 inches
Coal	7⅛ inches	0 inches	0 inches
Coal, gray	8⅜ inches	7⅛ inches	9⅝ inches
Coal	10¾ inches	12 inches	13¾ inches
Shale	⅞ inches	⅞ inches	⅞ inches
Coal	7⅛ inches	7⅛ inches	6 inches
Shale	1½ inches	2⅜ inches	1⅛ inches
Coal	12 inches	12 inches	12 inches
Shale	1⅛ inches	1⅛ inches	1⅛ inches
Coal	9⅝ inches	10⅛ inches	7¾ inches
Shale	1⅛ inches	⅞ inches	1½ inches
Coal	6 inches	7⅛ inches	4¾ inches
Rash	2⅜ inches	Shale 5⅜ inches	Smut 2⅜ inches
Coal	12 inches	18 inches	21⅝ inches
	98⅝ inches	109⅝ inches	102⅞ inches

(1) Fourth East Heading, Room 13.
(2) Seventh West Heading, Room 1.
(3) Third East Heading, Room 11.

In the N. W. ¼ of N. W. ¼ of S. 2, T. 20, R. 6 W.

Coal	7 inches
Sandstones	6 to 7 inches
Coal	4 inches
Sandstone	9 inches
Coal	12 inches
Parting	thin
Coal	60 inches
Clay	3 to 4 inches
Coal	18 inches

Slope No. 2 (Shannon Slope) is in the S. W. ¼ of S. W. ¼ of S. 3, T. 20, R. 6 W.

In the S. E. ¼ of N. E. ¼ of S. 3, T. 20, R. 6 W.

Coal smut	6 inches
Shale	24 inches
Coal	9 inches
Parting	½ inch
Coal smut	8 inches
Shale	6 inches
Coal	10 inches
Shale, about	6 feet
Coal smut	6 inches

This last outcropping may be of a different seam.

In the N. E. ¼ of N. E. ¼ of S. 9, T. 20, R. 6 W.

Coal	5 inches
Shale	6 inches
Coal	40 inches

This outcropping may not show the full thickness of the seam.

IN THE BIG BASIN

At the *Kennedy Coal Bed* in the N. E. ¼ of N. W. ¼ of S. 19, T. 20, R. 6 W.

Sandstone	
Shale	12 to 24 inchse
Coal	¼ to 5 inches
Shale	¾ to 2 inches
Coal	6 to 8 inches
Shale	to 7 inches
Coal	2 inches
Shale	¼ to 7 inches
Coal	2 to 3 inches
Shale	¼ to 1 inch
Coal	1 to 2 inches
Shale	½ to 3 inches
Coal	¼ to ¾ inch
Shale	¼ to 2 inches
Coal	¾ to 6 inches
Shale	1 to 3 inches
Coal	½ to 3 inches
Shale	4 to 8 feet
Coal, with partings, *Jagger Seam*,	6 to 8 feet

In the N. E. ¼ of N. E. ¼ of S. 8, T. 20, R. 6 W.

Shale	
Coal smut	48 to 60 inches
Clay, with *coal streaks* in lower part	24 inches
Shale, about	72 inches
Coal, (Jagger Seam)	

This last outcropping in another place shows about thus:

Coal smut	9 inches
Shale	streak
Coal smut	3 inches
Shale	streak
Coal smut	41 inches
Shale	½ inch
Coal smut	16 inches

In eastern part of N. E. ¼ of S. 4; T 20, R. 6 W.

Coal, reported,	11 feet or more

In the N. W. ¼ of N. W. ¼ of S. 3, T. 20, R. 6 W.

Coal, reported, about 11 feet thick, with 3 to 4 shale partings of from 1 to 2 inches each in thickness.

Near center of S. 34 T. 19, R. 6 W.

Coal, reported, about	14 feet

In *Connellsville Mine* in the N. E. ¼ of N. E. ¼ of S. 34, T. 19, R. 6 W.

Coal, reported,	11 feet or more

In the N. E. ¼ of N. W. ¼ of S. 19, T. 19, R 6 W.

Coal, reported, about	12 feet

In the S. W. ¼ of N. E. ¼ of S. 9, T. 19, R. 5 W.

Shale	
Coal smut	2 inches
Shale	3 inches
Coal smut	12 inches
Shale	10 inches
Coal smut	85 inches
Clay	

In the S. E. ¼ of S. W. ¼ of S. 3, T. 19, R. 5 W.

Shale	
Coal smut	1 inch
Shale, clayey	6 inches
Coal smut	¼ inch
Shale	2 inches
Coal smut	16 inches
Shale, clayey	21 inches
Coal smut	18 inches
Shale	¼ inch
Coal smut	12 inches
Shale, clayey	3 inches
Coal smut	60 inches
Shale	4 inches
Coal smut	11 inches
Shale	½ inch
Coal smut	72 inches
Clay	

This coal soon becomes engulfed in a fault for some eight miles to the northeast. It appears to be thin between Pratt Mines and Newcastle.

In the N. E. ¼ of S. W. ¼ of S. 17, T. 16, R. 2 W.

Coal	14 inches

In the N. E. ¼ of S. W. ¼ of S. 27, T. 15, R. 2 W.

Coal	24 inches
Shale	19 inches
Coal	9 inches

In the N. E. of N W. ¼ of S. 27, T. 15, R. 2 W.

Coal	15 inches
Shale	4 inches
Coal	9 to 10 inches
Shale	1 to 2 inches
Coal	9 to 10 inches
Shale	¼ inch
Coal	2 to 3 inches
Shale, clayey	7 inches
Coal	19 inches
Shale	2 inches
Coal	1 inch

In the S. W. ¼ of S. W. ¼ of S. 11, T. 15, R. 2 W.

Coal	4 inches
Shale, with *coal* streaks	1 inch
Coal	38 inches

In the N. W. ¼ of N. W. ¼ of S. 10, T. 15, R 2 W.

Coal smut	Several feet thick

In the N. E. ¼ of S. E. ¼ of S. 4, T. 15, R. 2 W.

Coal smut, reported	60 inches

In the S. E. ¼ of N. E. ¼ of S. 4, T. 15, R. 2 W.

Black Band Ore, reported	24 to 36 inches

In the N. W. ¼ of N. W. ¼ of S. 4, T. 15, R. 2 W.

Coal, reported	60 inches

In bore-hole in the N. E. ¼ of S. E. ¼ of S. 12, T. 15, R. 3 W.

Coal, reported	14 inches

In the N. W. ¼ of S. E. ¼ of S. 11, T. 15, R. 3 W.

Black Band Ore	24 inches
Coal	2 inches
Shale	24 inches
Coal	13 inches
Shale	½ inch
Coal	15 inches

In the S. W. ¼ of N. E. ¼ of S. 3, T. 15, R. 3 W.

Black Band Ore	9 to 10 inches
Coal	2 inches
Shale	1 inch
Coal	1 inch
Shale	½ inch
Coal	½ inch
Shale	3 to 4 inches
Coal	2 to 3 inches
Shale	1 inch
Coal	3 inches
Shale	19 to 20 inches
Coal	12 inches
Shale	1 inch
Coal	5 inches

In reported bore-hole in N. W. ¼ of N. E. ¼ of S. 28, T 17, R. 6 W

Coal	29 inches

This seam of coal in the central part of the field, along both the Locust Fork and the Black Warrior Rivers, is only a few inches thick, and in places it appears to be entirely wanting.

In the N. E. ¼ of S. E. ¼ of S. 31, T. 15, R. 5 W.

Coal smut	19 inches

In the N. W. ¼ of N. E. ¼ of S. 19, T. 15, R. 5 W.

Coal smut	2 to 3 inches

In the N. E. ¼ of S. E. ¼ of S. 23, T. 14, R. 6 W.

Coal smut	2 to 3 inches

In the N. E. ¼ of S. W. ¼ and N. E. ¼ of N. E. ¼ of S. 17, T. 14, R. 7 W.

Coal smut, about	6 inches

In reported bore-hole in S. W. ¼ of N. E. ¼ of S. 20, T. 14, R. 7 W.

Coal	3 inches

In reported bore-hole in S. W. ¼ of S. 26, T. 13, R. 8 W.

Coal	6 inches

Near center of S. 30, T. 13, R. 8 W.

Coal	6 inches

In reported bore-hole in N. W. ¼ of N. W. ¼ of S. 35, T. 13, R. 8 W.

Coal	5 inches

In reported bore-hole in S. W. ¼ of S. 35, T. 13, R. 8 W.

Coal	6 inches

In reported bore-hole in N. E. ¼ of N. E. ¼ of 3 T. 14, R. 8 W.

Coal	6 inches

In reported bore-hole in S. W. ¼ of S. 10, T. 14, R. 8 W.

Black Band Ore	12 inches

In reported bore-hole in N. E. ¼ of S. E. ¼ of S. 13, T. 13, R. 10 W.

Coal	18 inches

In reqorted bore-hole in S. E. ¼ of S. E. ¼ of S. 32 T. 13, R. 9 W.

Coal	18 inches

In a reported bore-hole in the N. E. ¼ of S. E. ¼ of S. 30, T. 13, R. 8 W.

Coal	9 inches

In reported bore-hole in N. E. ¼ of S. 25, T. 13 R. 9 W.

Coal	15 inches

In the S. E. ¼ of N. W. ¼ of S. 8, T. 14, R. 8 W.

Coal	2 to 3 inches
Shale	¼ inch
Coal	13 to 14 inches
Shale, clayey	56 inches
Coal, (Jagger Seam)	6 inches

Two outcrops in the N. E. ¼ of N. W. ¼ of S. 7, T. 14, R. 8 W.

Coal smut	13 to 20 inches

In reported bore-hole in S. W. ¼ of S. 5, T. 14, R. 8 W.

Coal	24 inches

In reported bore-hole in S. E. ¼ of N. E. ¼ of S. 34, T. 13, R. 9 W.

Coal	18 inches

In *Pocahontas Shaft* about in N. W. ¼ of S. E. ¼ of S. 27, T. 13, R. 9 W.

Coal, reported	8 inches

In *Chickasaw Shaft* in N. E. ¼ of N. E. ¼ of S. 32, T. 13, R. 9 W.

Coal, reported	14 inches

In a reported bore-hole in S. E. ¼ of S. E. ¼ of S. 32, T. 13, R. 9 W.

Coal and shale	15 inches

In *McDonald Shaft* in the N. E. ¼ of S. E. ¼ of S. 30, T. 13, R. 9 W.

Coal, reported	14 inches

In reported bors-hole in the N. W. ¼ of N. W. ¼ of S. 31, T. 13, R. 9 W.

Coal	12 inches

In the S. E. ¼ of S. E. ¼ of S. 25, T. 13, R. 10 W.

Coal smut	7 to 8 inches

In the S. E. ¼ of S. W. ¼ of S. 24, T 13, R. 10 W.

Coal	14 to 15 inches

In reported bore-hole in S. W ¼ of S. W. ¼ of S. 13, T. 13, R. 10 W.

Coal	14 inches

In reported bore-hole in S. E. ¼ of S. W. ¼ of S. 25, T. 13, R. 10 W.

Coal	6 inches
Shale	16 inches
Coal	30 inches

In reported bore-hole in N. E. ¼ of S. E. ¼ of S. 13, T. 13, R. 10 W.

Coal	18 inches
Sandstones and shales	90 inches
Coal	8 inches

In *Galloway Shaft* in S. E. ¼ of S W. ¼ of S. 12, T. 13, R. 10 W.

Coal, reported	15 inches

In several outcrops in N. ½ of N. W. ¼ of S. 22, T. 13, R. 10 W.

Coal	12 to 14 inches

In the S. E. ¼ of S. E. ¼ of S 16, T. 13, R. 10 W.

Coal ....10 inches

In the N. W. ¼ of N. E. ¼ of S. 23, T. 13, R. 11 W.

Coal ....15 inches

In the N. W. ¼ of N. W. ¼ of S. 22, T. 13, R. 11 W.

Coal ....11 inches

In the N. W. ¼ of S. E. ¼ of S. 16, T. 13, R. 11 W.

Coal ....12 inches

In the N. E. ¼ of N. E. ¼ of S. 15, T. 13, R. 11 W.

Coal ....14 inches

In the S. W. ¼ of S. W. ¼ of S. 33, T. 12, R. 11 W.

Coal ....10 inches

In the N. E. ¼ of N. E. ¼ of S. 29, T. 12, R. 11 W.

Coal ....13 inches

In several reported bore-holes in the south-eastern part of Marion County.

Coal .... 6 inches

THE HORSE CREEK (MARY LEE) COAL SEAM.

This coal seam, called also the *Mary Lee*, *Mt. Carmel*, *Gamble*, etc., seam, is one of the principal coal seams of the Warrior Field. It is a thick workable seam on its entire outcrop except in the extreme western part of the field and in places in the south-eastern and north-eastern parts of the field. In places it is in two benches, the bottom bench being an especially fine clean coal. This seam is mined at the Snake, Black Diamond, Morrow, Mary Lee, Little Warrior, Palos, Mountain Top, Horse Creek, Cordova, Calumet, Gamble, etc., mines. It will be for a long time to come one of the principal mining coal seams of the State. Its coal is coked extensively. It furnished about 381,964 tons of the coal output for 1898.

OUTCROPS OF THE HORSE CREEK COAL SEAM.

IN THE LITTLE BASIN.

In the N. W. ¼ of N. E. ¼ of S. 32, T. 19, R. 5 W.

Coal smut	22 inches
Coal and shale	4 inches

In the S. E. ¼ of S. W. ¼ of S. 16, T. 19, R. 5 W.

Coal smut	37 inches
Shale	½ inch
Coal	6 inches
Black Band Ore, reported	24 inches.

In the S. E. ¼ of S. E. ¼ of S. 17, T. 19, R. 5 W.

Shale	
Coal smut with shale partings	9 inches
Coal smut	11 to 12 inches
Mineral charcoal, in places	¼ inch
Coal smut	7 to 8 inches
Shale	4 inches
Coal	3 inches
Shale	½ inch
Coal smut	6 to 7 inches
Clay.	

The outcrops between Adger and Johns appear to be about 36 inches thick. At Johns, it is some *40 inches thick.*

In the N. W. ¼ of N. W. ¼ of S. 2, T. 20, R. 6 W.

Coal smut	12 inches
Shale	2 inches
Coal smut	14 inches
Parting	1 inch
Coal	9 inches
Mineral charcoal	streak
Coal smut	7 inches
Clay	4 to 5 inches
Coal smut	3 inches

In the N. E. ¼ of N. W. ¼ of S. 8, T. 20, R. 6 W.

Coal smut	34 inches
Black Band Ore	16 inches
Clay	22 inches

IN THE BIG BASIN.

In the N. W. ¼ of N. W. ¼ of S. 3, T. 20, S. 6 W.

Coal, called *cannel coal*	60 inches
Black Band Ore	24 inches

In the S. W. ¼ of N. E. ¼ of S. 34, T. 19, R. 6 W.

Coal, reported, called *cannel coal*	60 inches
Black Band Ore, reported	24 inches

In the S. E. ¼ of N. W. ¼ of S. 19, T. 19, R. 5 W.

Shale	
Coal smut	6 inches
Shale	1 inch
Coal smut	7 inches
Shale	1 to 2 inches
Coal smut	24 inches
Shale, clayey	4 inches
Coal smut	4 inches
Shale	½ inch
Coal smut	13 inches
Shale, clayey	4 inches
Coal smut	5 inches
Shale, clayey	10 to 12 feet
Black Band Ore, reported	36 inches

At the *Snake* (*Black Diamond*) *Slope* in S. E. ¼ of N. W. ¼ of S. 15, T. 17, R. 3 W.

Sandstone	
Shale	0 to 36 inches
Coal	23 to 32 inches
Shale	1 to 3 inches
Coal	4 to 6 inches
Shale	4 to 6 inches
Coal	5 to 14 inches
Rash	3 to 6 inches
Coal, with thin shale parting in places	29 to 45 inches

Fig. 15

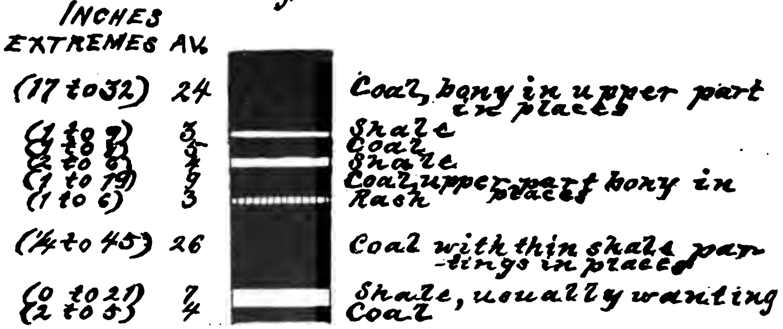

FIG. 15. *Average Section of the* Horse Creek (Mary Lee) Coal Seam *along the eastern edge of the Warrior Coal Field.*

At the *Tennessee* (*Vulcan*) *Slope* in S. E. ¼ of N. W. ¼ of S. 15, T. 17, R. 3 W.

Sandstone	
Bony coal and shale	3 inches
Bony coal	2 inches

(OVER)

Coal, good	12 inches
Shale	2 inches
Coal	8 inches
Shale	5 inches
Shale and *bony coal*	2 inches
Coal	17 inches
Rash, coal and shale	3 inches
Coal	14 inches
Shale	streak
Coal	8 inches
Shale	

In the N. E. ¼ of N. E. ¼ of S. 15, T. 17, R. 3 W.

Shale	
Coal, shaly	23 inches
Shale, clayey	2 inches
Coal	4 inches
Shale, clayey	4 inches
Coal	13 inches
Shale	1 to 2 inches
Coal	32 inches
Shale	6 inches
Coal	2 inches

In the S. W. ¼ of N. E. ¼ of S. 1, T 17, R. 3 W.

Shale	
Coal, with two thin shale partings in places	25 to 29 inches
Shale	1 to 9 inches
Coal, with two thin shale partings in places	6 to 15 inches
Shale	½ inch
Shale, with *coal seams* in places	7 to 9 inches
Coal, with two thin shale partings in places	59 to 73 inches

At the *Morrow Slope* in N. E. ¼ of S. W. ¼ of S. 11, T. 17, R. 3 W.

Shale	
Coal	18 to 28 inches
Shale	1 inch
Coal	5 to 6 inches
Shale	5 to 6 inches
Coal, with a streak of shale in places	50 to 51 inches
Shale	2 to 3 inches
Coal, about	5 inches

In reported bore-hole in N. W. ¼ of S. W. ¼ of S. 17, T. 16, R. 2 W.

Coal	1 inch
Sandstone, shale	7 feet 1 inch
Coal	17½ inches
Shale	3½ inches
Coal	7½ inches
Clay	3 inches
Coal	½ inch
Clay	1½ inches
Coal	1 inch

UofM

At *Newcastle* in S. W. ¼ of N. W. ¼ of S. 17, T. 16, R. 2 W.

Shale, with *kidney ore*	
Coal	28 inches
Shale	9 inches
Coal	1 inch
Shale	2 inches
Coal	1 to 2 inches
Shale	1 inch
Coal	¼ inch
Shale	20 to 24 inchhes
Coal	4 inches

At an other place at Newcastle, the coal outcrop with shale partings measured about *30 inches.*

In the N. W. ¼ of S. E. ¼ of S. 28, T. 15, R. 2 W.

Coal smut	15 to 16 inches
Shale	3 to 4 inches
Coal	3 to 4 inches

In the S. E. ¼ of N. E. ¼ of S. 13, T. 15, R. 3 W.

Coal	6 inches
Shale	3 inches
Coal	8 inches
Shale	4 inches
Coal	1 inch
Shale	3 inches
Coal	2 inches
Shale	½ inch
Coal	1 inch
Shale	½ inch
Coal	1 inch
Shale	½ inch
Coal	28 inches

In the N. W. ¼ of N. E. ¼ of S. 13, T. 15, R. 3 W.

Shale	
Coal smut	8 inches
Shale	3 inches
Coal smut	½ inch
Shale	2 inches
Coal smut	5 inches
Shale	½ inch
Coal smut	36 inches
Shale	½ inch
Coal smut	3 inches

In the S. E. ¼ of N. W. ¼ of S. 13, T. 15, R. 3 W.

Coal smut	7 to 8 inches
Shale	½ to 3 inches
Coal	1 to 5 inches
Shale	½ to 1 inch
Coal	5 to 11 inches
Shale	⅛ to ½ inch
Coal	15 to 30 inches

In the N. E. ¼ of S. E. ¼ of S. 11, T. 15, R. 3 W.

Coal	4 to 5 inches
Shale	1 to 2 inches
Coal	23 inches.
Shale	¾ inches
Coal	9 inches
Shale	¼ inch
Coal	7 inches
Shale	¼ inch
Coal	¼ inch

In the N. E. ¼ of S. E. ¼ of S. 3, T. 15, R. 3 W.

Coal	4 inches
Shale	1 to 2 inches
Coal	49 inches

In the N. E. ¼ of S. E. ¼ of S. 4, T. 15. R. 3 W.

Coal	2 to 3 inches
Shale	4 inches
Coal	18 inches
Shale	2 inches
Coal	2 to 3 inches

In the N. E. ¼ of S. W. ¼ of S. 13, T. 15, R. 4 W.

Coal	11 inches
Shale	2 inches
Coal	9 inches
Shale	18 inches
Coal	22 to 23 inches
Shale	½ inch
Coal	8 inches

In the S. E. ¼ of N. E. ¼ of S. 28, T. 15, R. 4 W.

Coal	18 inches
Shale	7 inches
Coal	30 inches
Shale	10 inches
Coal	9 inches
Shale	2 inches
Coal	1 inch
Shale	¾ inches
Coal	¾ inch

At several outcrops in N. E. ¼ of N. W. ¼ of S. 32, T. 15, R. 4 W.

Coal, with a thin shale parting in places	20 to 27 inches
Shale	7 to 12 inches
Coal, with thin shale partings in places	33 to 34 inches
Shale, about	11 inches
Coal	4 inches

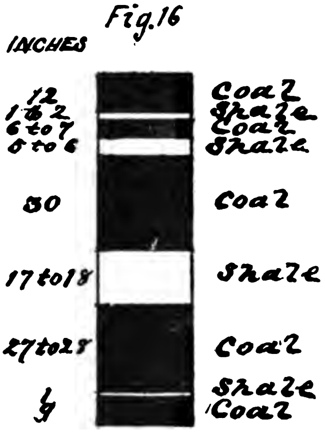

FIG. 16. *Section of* Horse Creek (Mary Lee) Coal Seam *in the mines at DeBerniere (Little Warrior.)*

In the N. W. ¼ of S. W. ¼ of S. 6, T. 16, R. 4 W.

Coal smut	18 inches
Shale	5 inches
Coal smut	1 inch
Shale	12 inches
Coal smut	28 inches

In the S. E. ¼ of S. W. ¼ of S. 1, T. 16, R. 5 W.

Coal smut	17 inches
Shale	7 to 8 inches
Coal smut	20 to 21 inches
Shale	1 inch
Coal smut	5 inches
Shale	8 to 9 inches
Coal smut	24 inches
Shale	1 to 2 inches
Coal smut	8 inches
Shale	4 inches
Coal smut	8 inches

In reported bore-hole in N. W. ¼ of N. W. ¼ of S. 30, T. 16, R. 4 W.

Coal, with 3½ inch parting	50 inches
Shale	16 inches
Coal, with two inch parting	41 inches

At the *Bessie Mine* in S. W. ¼ of S. W. ¼ of S 14, T. 16, R. 5 W.

Coal	12 inches
Shale	¾ inches

Coal	7 inches
Shale	10 to 11 inches
Coal	28 to 29 inches
Shale	18 to 19 inches
Coal	51 inches

In the S. W. ¼ of N. E. ¼ of S. 22, T. 16, R. 5 W.

Sandstones, shaly, visible	10 to 12 feet
Shales	3 feet
Coal	14 to 15 inches
Shale	¼ inch
Coal	7 inches
Shale	3 inches
Coal	2 to 3 inches
Shale	8 inches
Coal	½ inch
Shale	1 inch
Coal	3 inches
Shale	¼ inch
Coal	6 inches
Shale	½ inch
Coal	16 to 17 inches
Parting, shale, clayey	19 inches
Coal, Lower Bench, reported	48 inches

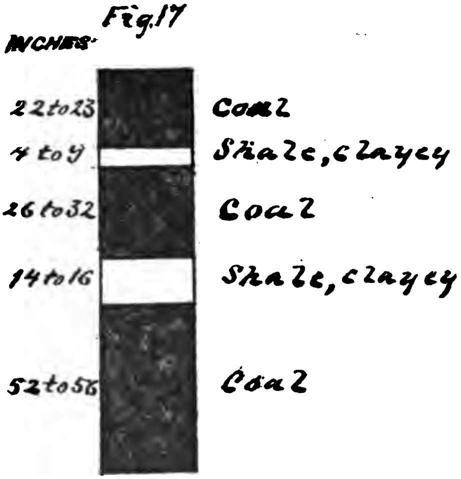

FIG. 17. *Section of the* Horse Creek (Mary Lee) Coal Seam *in the Palos Mines.*

At the *Turner Old Mine, Palos No. 1,* in the N. W. ¼ of N. E. ¼ of S. 22, T. 16, R. 5 W.

Coal	22 to 23 inches
Shale, clayey, about	9 inches
Coal	26 to 27 inches
Shale, clayey, about	14 inches
Coal	52 to 56 inches

At *Slope No. 2, Palos*, in N. W. ¼ of S. E. ¼ of S. 15, T. 16, R. 5 W.

Shale, cover	
Coal, reported	22 inches
Shale, reported	4 inches
Coal, reported	32 inches
Shale, reported	16 inches
Coal, Lower Bench	52 inches

Only the *Lower Bench*, a very fine grade of coal, is mined here now at Palos.

In the S. E. ¼ of S. W. ¼ of S. 22 T. 16. R. 5 W.

Coal smut, with parting near top	36 inches

This outcropping is probably only of the *Upper Bench* and does not show perhaps the full thickness of that bench.

In the S. E. ¼ of N. E. ¼ of S. 28, T. 16, R. 5 W.

Debris	
Coal smut	14 inches
Shale, clayey	1 to 2 inches
Coal smut	25 inches
Shale, clayey	13 inches
Coal	53 inches

In several places at the *Williams Coal Bed* in N. W. ¼ of N. W. ¼ of S. 33, T 16, R. 5 W.

Shale	
Coal smut, with some *mineral charcoal*	14 to 20 inches
Shale	1 to 3 inches
Coal smut	5 to 6 inches
Shale, clayey	5 to 6 inches
Coal, with several thin shale streaks in places	28 to 29 inches
Shale, clayey	18 to 26 inches
Coal, lower bench	33 to 72 inches

In the N. W. ¼ of N. E. ¼ of S. 32, T. 16, R. 5 W.

Coal, may not be full thickness	14 inches
Shale	2 inches
Coal	5 to 6 inches
Shale	4 to 5 inches
Coal	24 inches
Shale, clayey	15 to 16 inches
Coal, bottom bench	26 to 27 inches

In the N. W. ¼ of N. E. ¼ of ·. 5, T. 17, R. 5 W.

Shale, visible	4 to 5 feet
Coal	3 inches
Shale	¼ inches
Coal	17 to 18 inches
Shale	4 inches.
Coal	4 inches

(OVER)

Shale	1 inch.
Coal	25 to 26 inches
Shale, clayey	18 inches
Shale with *coal streaks*	5 inches
Coal, good	24 to 25 inches
Shale, clayey, visible about	3 feet

At the *Hanby Coal Bed* in S. E. ¼ of N. W. ¼ and N. E. ¼ of S. W. ¼ of S. 6, T. 17, R. 5 W.

Coal, with some thin partings	22 inches
Shale	6 inches
Coal	4 inches
Shale	1 to 2 inches
Coal	18 to 20 inches
Shale	streak
Coal	2 inches
Shale	24 inches
Coal	4 to 5 inches

In the S. W. ¼ of S. W. ¼ of S. 6, T. 17, R. 5 W.

Coal	4 inches
Shale	¼ inches
Coal	16 to 17 inches
Shale	6 inches
Coal	4 inches
Shale	2 to 3 inches
Coal	28 inches
Shale	30 inches
Coal	6 to 7 inches
Shale, about	12 feet
Coal	1 inch
Shale	16 inches
Coal	28 inches

In the N. W. ¼ of S. E. ¼ and S. W. ¼ of S W. ¼ of S. 36, T. 16, R. 6 W.

Coal	15 to 16 inches
Shale	5 inches
Coal	32 to 34 inches
Shale	1 inch
Coal	2 inches

In reported bore-hole in N. W. ¼ of N. E. ¼ of S. 28, T. 17, R. 6 W.

Coal	26 inches
Shale	5 to 6 inches
Coal	9 inches
Shale	14 inches
Coal, clean	26 inches
Shale	21 inches
Coal	20 inches

In the N. W. ¼ of N. E. ¼ of S. 32, T. 16, R. 5 W.

Coal	16 inches
Shale	3 inches
Coal	4 inches
Shale	2 inches
Coal	26 inches
Shale	19 inches
Coal	6 inches

In the S. W. ¼ of S. E. ¼ of S. 30, T. 16, R. 5 W.

Coal	9 inches
Shale	1 to 2 inches
Coal	4 inches
Shale	2 inches
Coal	25 inches
Shale	24 inches
Coal	2 to 3 inches

In the N. W. ¼ of S. W. ¼ of S. 30, T. 16, R. 5 W.

Coal	7 inches
Shale	2 inches
Coal	4 inches
Shale	4 inches
Coal	25 inches
Shale	12 inches
Coal	4 inches

In the N. W. ¼ of S. W. ¼ of S. 19, T. 16, R. 5 W.

Coal	8 to 9 inches
Shale	1 to 2 inches
Coal	5 inches
Shale	2 inches
Coal	24 inches.
Shale	11 to 12 inches
Coal	58 to 59 inches

In the N. E. ¼ of N. E. ¼ of S. 6, T. 16, R 8 W.

Coal	9 to 10 inches
Shale	¾ inch
Coal	21 to 22 inches
Shale	10 to 12 feet
Coal	19 inches

At the *Beechy Hollow Coal Bed* in S. E. ¼ of N. E. ¼ of S. 36, T. 15, R. 6 W.

Coal	33 to 36 inches
Shale	½ to 1 inch
Coal	5 to 6 inches
Shale	1 to 2 inches
Coal	2 to 4 inches
Shale	8 to 9 inches
Coal	18 to 22 inches

In the S. W. ¼ of N. W. ¼ of S. 32, T. 15, R. 4 W.

Coal, with thin partings near top........36 to 38 inches

In the S. E. ¼ of S. E. ¼ of S. 3, T. 16, R. 6 W.

Coal.... ....25 inches

In the S. E. ¼ of N. W. ¼ of S. 34, T. 15, R. 6 W.

Coal	24 to 25 inches
Parting....	½ inch
Coal....	5 to 6 inches

In the N. W. ¼ of N. W. ¼ of S. 25, T. 15, R. 6 W.

Coal smut.... ....36 inches

At the *Mountain Top Slope* in S. E. ¼ of S. W. ¼ of S. 19, T. 15, R. 5 W.

Shale, full of fossil impressions.	
Coal	31 to 32 inches
Shale...............	½ inch
Coal.......	4 inches
Shale..	1 inch
Coal.......	2 to 3 inches
Shale.........	4 to 6 inches
Coal.....	18 to 20 inches
Bone Coal.....	1 to 2 inches
Coal, with perhaps a streak of *bone coal*....	23 to 24 inches
Shale.	

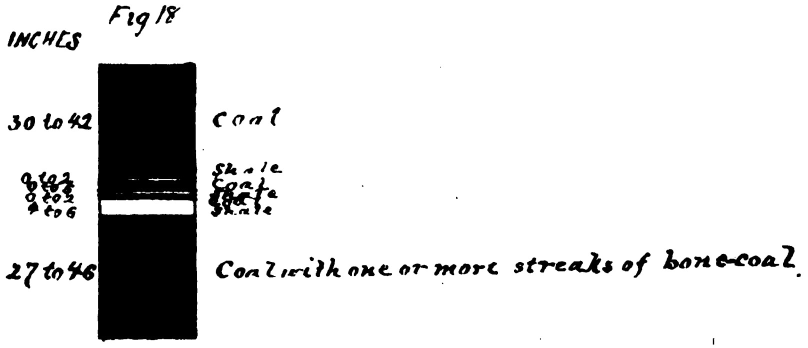

FIG. 18. *Section of the* Horse Creek (Mary Lee) Coal Seam *in the Horse Creek Mines.*

In the *Price Mines* (*Horse Creek*) in S. W. ¼ of S. E. ¼ of S. 18, T. 15, R. 5 W.

Shale, cover, full of fossil impressions.	
Coal	30 to 36 inches
Shale	½ to ¾ inch
Coal	4 to 5 inches
Shale	1 to 2 inches
Coal	1 to 2 inches
Shale	5 to 6 inches
Coal, with one or two streaks of *bone coal*	43 to 44 inches

In the above *Price Mines*, the coal seam with the three partings is said to run from *9 feet to 9 feet 6 inches thick.*

At the *Dora Mines* in the S. W. ¼ of S. W. ¼ of S. 7, T. 15, R. 5 W.

Coal	36 to 38 inches
Shale	0 to 2 inches
Coal	0 to 2 inches
Shale	6 inches
Coal	27 to 30 inches

At the *Ivey Leaf Mines* in S. E. ¼ of N. W. ¼ of S. 8, T. 15, R. 5 W.

Coal	40 to 42 inches
Shale	4 inches
Coal	36 inches.

In the N. W. ¼ of N. E. ¼ of S. 4, T. 15, R. 5 W.

Coal	30 inches
Shale	2 inches
Coal	2 inches
Shale	5 inches
Coal	36 inches.

In the N. W. ¼ of N. E. ¼ of S. 4, T. 15, R. 5 W.

Coal	30 inches
Shale	2 inches
Coal	18 inches
Shale	2 to 3 inches
Coal	36 inches.

In the N. W. ¼ of N. W. ¼ of S. 4, T. 15, R. 5 W.

Coal	20 inches
Shale	½ inch
Coal	2 to 3 inches
Shale	3 inches
Coal	17 inches

In the N. E. ¼ of N. E. ¼ of S. 31, T. 15, R. 5 W.

Coal	25 inches
Shale	½ inch
Coal	4 to 5 inches

Reported Section by Mr. H. W. Milner in N. E. ¼ of S. E. ¼ of S. 33, T. 14, R. 5 W.

Coal	32¼ inches
Shale	1½ inches
Coal	3 inches
Shale	5½ inches
Coal	22¼ inches
Shale	3¼ inches
Coal	4½ inches

Reported Section by Mr. H. W. Milner in S. E. ¼ of S. E. ¼ of S. 33, T. 14, R. 5 W.

Coal	24 inches
Shale	2¼ inches
Coal	1¾ inches
Shale	7 inches
Coal	25½ inches

In the N. E. ¼ of S. E. ¼ of S. 36, T. 14, R. 6 W.

Coal	31 inches
Shale	½ inch
Coal	4 to 5 inches

Fig.19

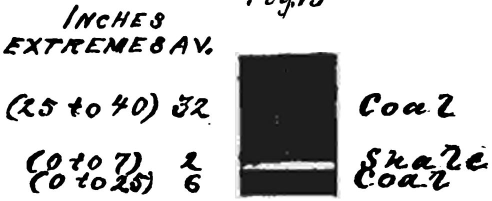

FIG. 19. *Average Section of the* Horse Creek (Mary Lee) Coal Seam *in the central part of the Warrior Coal Field, along the Black Warrior River.*

In the N. E. ¼ of N. E. ¼ of S. 36, T. 14, R. 6 W.

Coal	30 inches
Shale	½ inch
Coal	4 to 5 inches

In the N. W. ¼ of N. E. ¼ of S. 2, T. 15, R. 6 W.

Coal	29 to 30 inches
Shale	½ inch
Coal	3 inches

In the S. W. ¼ of N. E. ¼ of S. 2, T. 15, R. 6 W.

Coal	31 inches
Shale	½ inch
Coal	5 to 6 inches

In the S. W. ¼ of N. W. ¼ of S. 2, T. 15, R. 6 W.

Coal	29 to 30 inches
Shale	½ inch
Coal	4 inches

In the S. W. ¼ of S. E. ¼ of S. 2, T. 15, R. 6 W.

Coal	31 inches
Shale	1 inch
Coal	5 inches

In the N. W. ¼ of N. E. ¼ of S. 10, T. 15, R. 6 W.

Coal	30 to 31 inches
Charcoal	streak.
Coal	4 to 5 inches

In the N. E. ¼ of N. W. ¼ of S. 10, T. 15, R. 6 W.

Coal	32 inches
Charcoal	streak
Coal	5 to 6 inches

In the N. W. ¼ of N. W. ¼ of S. 10, T. 15, R. 6 W.

Coal	28 inches
Charcoal	streak.
Coal	5 inches

In the N. W. ¼ of S. E. ¼ of S. 10, T. 15, R. 6 W.

Coal	29 inches.
Charcoal	streak.
Coal	4 inches

In the N. E. ¼ of S. E. ¼ of S. 10, T. 15, R. 6 W.

Coal	32 inches.
Charcoal	streak.
Coal	4 inches

In the S. W. ¼ of S. W. ¼ of S. 11, T. 15, R. 6 W.

Coal, reported, with partings, in two benches	72 inches

In reported bore-hole in N. W. ¼ of S. E. ¼ of S. 16, T. 15, R. 6 W.

Coal	31 inches
Shale	½ inch
Coal	1 to 2 inches

In Drift in the S. E. ¼ of N. E. ¼ of S. 8, T. 15, R. 6 W.

Shale, cover.	
Coal	34 inches
Shale	5 inches
Coal, down to water	11 inches
Coal, under water, seemingly about	9 inches

In the S. E. ¼ of S. W. ¼ of S. 4, T. 15, R. 6 W.

Coal	33 inches
Shale	6 inches
Coal	6 inches

In the S. E. ¼ of N. E. ¼ of S. 3, T. 15, R. 6 W.

Coal	28 inches.
Shale	1 inch
Coal	4 inches

In the S. E. ¼ of N. W. ¼ of S. 3, T. 15 ,R. 6 W.

Coal	29 to 30 inches

In the S. W. ¼ of S. W. ¼ of S. 34, T. 14, R. 6 W.

Coal, reported	30 inches.
Shale	½ inch
Coal	3 to 4 inches

In the S. W. ¼ of N. W. ¼ of S. 27, T. 14, R. 6 W.

Coal	25 inchess
Shale	½ inch
Coal	4 to 5 inches

In the S. W. ¼ of S. E. ¼ of S. 22, T. 14, R. 6 W.

Coal	26 to 27 inches
Shale	½ inch
Coal	4 inches

In the N. W. ¼ of S. W. ¼ of S. 22, T. 14, R. 6 W.

Coal	28 inches

In two places in the N. W. ¼ of S. W. ¼ of S. 33, T. 14, R. 6 W.

Coal	28 to 30 inches
Shale	¾ to 1 inch
Coal	5 to 6 inches
Shale	4 to 5 inches
Coal	1 to 18 inches

In the S. W. ¼ of S. W. ¼ of S. 33, T. 14, R. 6 W.

Coal	27 inches.
Shale	½ inch
Coal	5 inches

In the S. W. ¼ of S. E. ¼ of S. 33, T. 14, R. 6 W.

Coal	35 inches
Shale	3 to 4 inches
Coal	13 inches

In the S. E. ¼ of S. W. ¼ of S. 33, T. 14, R. 6 W.

Coal	32 to33 inches
Shale	4 to 5 inches
Coal	20 to 21 inches

In the S. W. ¼ of S. E. ¼ of S. 8, T. 15, R. 6 W.

Coal	36 inches.

In the N. E. ¼ of N. E. ¼ of S 17, T. 15, R. 6 W.

Coal	32 inches
Shale	7 inches
Coal	14 to 15 inches

Some 75 to 80 yards south of the last outcroppng.

Coal	35 inches
Shale	5 to 6 inches
Coal smut	10 inches

In the N. W. ¼ of S. E. ¼ of S. 17, T. 15, R. 6 W.

Coal	36 inches
Shale	5 inches
Coal	25 inches

In the S. E. ¼ of N. W. ¼ of S. 17, T. 15, R. 6 W.

Coal	34 inches
Shale	5 to 6 inches
Coal	5 inches

In the N. W. ¼ of S. W. ¼ of S. 17, T. 15, R. 6 W.

Coal and slate	31 inches

In the N. W. ¼ of S. E. ¼ of S. 8, T. 15, R. 6 W.

Coal	39 to 40 inches
Shale	6 inches
Coal	7 to 8 inches

In the N. W. ¼ of S. E. ¼ of S. 8, T. 15, R. 6 W.

Coal	35 inches
Shale	5 inches
Coal	7 inches

In bore-hole in S. E. ¼ of N. W. ¼ of S. 8, T. 15, R. 6 W.

Coal	31 inches
Shale	1 inches
Coal	3 to 4 inches

In the N. E. ¼ of N. W. ¼ of S. 8, T. 15, R. 6 W.

Coal	36 inches
Shale	5 to 6 inches
Coal	6 to 7 inches.

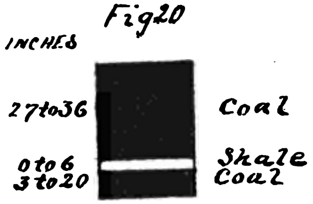

Fig. 20. *Section of the* Horse Creek (Mary Lee) Coal Seam *near Cordova.*

In the N. E. ¼ of S. W. ¼ of S. 5, T. 15, R. 6 W.

Coal	28 to 29 inches
Shale	½ inch
Coal	3 to 4 inches

In the N. W. ¼ of S. W. ¼ of S. 5, T. 15, R. 6 W.

Coal smut	27 inches
Coal smut	streak...
Coal	3 inches

In the S. E. ¼ of N. W. ¼ of S. 6, T. 15, R. 6 W.

Coal	27 to 28 inches
Shale	streak
Coal	3 to 5 inches

About 100 yards west of last outcroppng.

Coal	32 inches
Shale	½ inch
Coal	4 to 5 inches

In the N. W. ¼ of N. W. ¼ of S. 6, T. 15, R. 6 W.

Coal	30 inches.
Shale	½ inch
Coal	3 inches

In the N. W. ¼ of N. E. ¼ of S. 1, T. 15, R. 7 W.

Coal	30 inches

In the N. W. ¼ of S. E. ¼ of S. 28, T. 14, R. 7 W.

Coal	42 inches

In the N. W. ¼ of S. W. ¼ of S. 35, T. 14, R. 7 W.

Coal	36 inches
Shale	5 inches
Coal	24 inches.

In the S. E. ¼ of N. E. ¼ of S. 34, T. 14, R. 7 W.

Coal	36 inches

In the S. W. ¼ of N. E. ¼ of S. 34, T. 14, R. 7 W.

Coal	36 inches

In the S. W. ¼ of S. W. ¼ of S. 27,, T. 14, R. 7 W.

Coal	34 inches
Shale	5 inches
Coal	19 inches

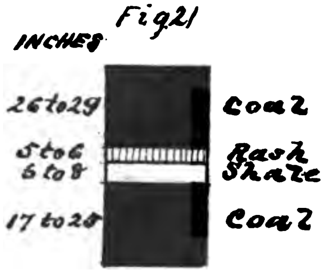

FIG. 21. *Section of the* Horse Creek (Mary Lee) Coal Seam *in the Calumet Mine, in the N. W. ¼ of S. W. ¼ of S. 28, T. 14, R. 7 W.*

In the N. W. ¼ of S. W. ¼ of S. 28, T. 14, R. 7 W.

Coal	30 inches
Shale	7 nches
Coal	18 inches

In the S. E. ¼ of N. E. ¼ of S. 29, T. 14, R. 7 W.

Coal	35 inches
Shale	6 inches
Coal	30 inches

In the S. W. ¼ of N. E. ¼ of S. 29. T. 14, R. 7 W.

Coal	32 inches
Shale	5 inches
Coal	30 inches

In the N. W. ¼ of S. E. ¼ of S. 20, T. 14, R. 7 W.

Coal	40 inches
Shale	6 inches
Coal	34 inches

In the N. E. ¼ of N. W. ¼ of S. 20, T. 14, R. 7 W.

Coal	36 inches
Shale	5 inches
Coal	36 inches

In the N. E. ¼ of S. E. ¼ of S. 19, T. 14, R. 7 W.

Coal	30 to 42 inches
Shale	4 inches
Coal	48 to 54 inches

In the N. E. ¼ of N. W. ¼ of S. 19, T. 14, R. 7 W.

Coal	30 inches
Shale	5 inches
Coal	40 inches

In the S. E. ¼ of N. E. ¼ of S. 13, T. 14, R. 8 W.

Coal	32 inches
Shale	5 inches
Coal	66 inches

In the N. E. ¼ of N. E. ¼ of S. 24, T. 14, R. 8 W.

Coal	33 inches
Shale	1 inch
Coal	48 inches

In the S. E. ¼ of S. W. ¼ of S. 13, T. 14, R. 8 W.

Coal	31 to 32 inches
Shale	2 to 3 inches
Coal	37 inches

In the N. E. ¼ of S. E. ¼ of S. 7, T. 14, R. 7 W.

Coal	36 inches
Shale	5 inches
Coal	37 inches

In the S. E. ¼ of S. W. ¼ of S. 6, T. 14, R. 7 W.

Coal	42 inches
Shale	11 inches
Coal	44 inches

In the N. E. ¼ of S. W. ¼ of S. 2, T. 14, R. 8 W.

Coal	28 to 29 inches
Shale	6 to 7 inches
Coal	52 inches

In the S. W. ¼ of S. E. ¼ of S. 35, T. 13, R. 8 W.

Coal	42 inches
Shale	6 to 8 inches
Coal	36 inches

In the N. W. ¼ of S. E. ¼ of S. 35, T. 13, R. 8 W.

Coal	26 to 27 inches
Shale	5 inches
Coal	11 inches

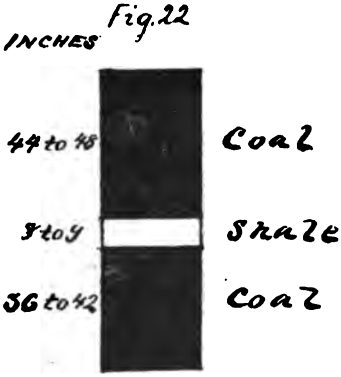

Fig. 22. *Section of the* Horse Creek (Mary Lee) Coal Seam *in the Gamble Mines.*

In 19 reported bore-holes at and near the Gamble Mines in N. W. ¼ of S. E. ¼ of S. 34, T. 13, R. 8 W.

Coal	32 to 62 inches, averaging 41 inches
Shale	6 to 42 inches, averaging 12 inches
Coal	12 to 48 inches, averaging 31 inches

In reported bore-hole in N. W. ¼ of N. E. ¼ of S. 3, T. 14, R. 8 W.

Coal	36 inches
Shale	6 inches
Coal	30 inches

In the N. W. ¼ of S. W. ¼ of S. 33, T. 13, R. 8 W.

Coal	28 inches
Shale	7 inches
Coal	64 inches

In the S. W. ¼ of S. W. ¼ of S. 33, T. 13, R. 8 W.

Coal	47 to 48 inches
Shale	6 to 7 inches
Coal	64 inches

In reported bore-hole in S. W. ¼ of S. W. ¼ of S. 33, T. 13. R. 8 W.

Coal	66 inches

In reported bore-hole in N. E. ¼ of S. 35, T 13, R. 8 W.

Coal	25 inches
Shale	8 inches
Coal	64 inches

In reported bore-hole at John Henry Burton's Residence in S. 3, T. 14, R. 8 W.

Coal	86 inches

In the N. E. ¼ of N. E. ¼ of S. 5, T. 14, R. 8 W.

Coal	15 inches
Shale	2 inches
Coal	27 inches.

In the N. W. ¼ of S. W. ¼ of S. 5, T. 14, R. 8 W.

Coal	13 inches
Shale	5 to 6 inches
Coal	42 inches

In the S. E. ¼ of N. W. ¼ of S. 8, T. 14, R. 8 W.

Coal smut	23 inches

In several outcrops in N. E. ¼ of N. W. ¼ of S. 7, T. 14, R. 8 W.

Coal smut	14 to 20 inches

In the S. W. ¼ of S. E. ¼ of S. 7, T. 14, R. 8 W.

Coal	27 inches.

In reported bore-hole in S. E. ¼ of N. W. ¼ of S. 8, T. 14, R. 8 W.

Coal	24 inches.
Shale	6 inches
Coal	18 inches

In reported bore-hole in S. W. ¼ of S. 10, T. 14, R. 8 W.

Coal	6 inches

In the N. E. ¼ of N. E. ¼ of S. 18, T. 14, R. 8 W.

Coal	27 inches

In the S. E. ¼ of S. W. ¼ of S. 18, T. 14, R. 8 W.

Coal	25 inches

In the N. W. ¼ of N. E. ¼ of S. 16, T. 14, R. 8 W.

Caol	24 inches

In the S. W. ¼ of N. E. ¼ of S. 15, T. 14, R. 8 W.

Coal	28 inches

In the S. E. ¼ of S. E. ¼ of S. 21, T. 14, R. 8 W.

Coal	33 inches

In reported bore-hole in N. W. ¼ of S. 8, T. 14. R. 9 W.

Coal	38 inches

In the S. W. ¼ of N. E. ¼ of S. 11, T. 14, R. 9 W.

Coal	28 inches

In the N. W. ¼ of N. E. ¼ of S. 11, T. 14, R. 9 W.

Coal	28 to 30 inches

In the S. W. ¼ of N. W. ¼ of S. 2, T. 14, R. 9 W.

Coal	28 inches

In reported bore-hole in the S. E. ¼ of S. E. ¼ of S. 32, T. 19, R. 9 W.

Coal	31 inches

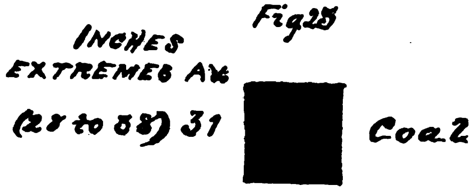

Fig. 23. *Average Section of the* Horse Creek (Mary Lee) Coal Seam *near Holly Grove and Chickasaw, Walker County.*

In reported bore-hole in S. W. ¼ of N. E. ¼ of S. 30, T. 13, R. 8 W.

Coal	32 to 33 inches

In reported bore-hole in N. E. ¼ of N. E. ¼ of S. 25, T. 13, R. 9 W.

Coal	29 inches

In the *Chickasaw Shaft* in N. E. ¼ of N. E. ¼ of S. 32, T. 13, R. 9 W.

Coal	36 inches

In the N. W. ¼ of N. W. ¼ of S. 32, T. 13, R. 9 W.

Coal	30 inches

In the S. E. ¼ of S. E. ¼ of S. 25, T, 13, R. 10 W.

Sandstone, some	12 feet
Coal	1 inch
Shale	½ inch
Coal	6 inches
Shale, clayey	18 inches
Coal	½ inch

In reported bore-hole in N. E. ¼ of S. E. ¼ of S. 13, T. 13, R. 10 W.

Coal	10 inches

In *Galloway Shaft* in S. E. ¼ of S. W. ¼ of S. 12, T. 13, R. 10 W.

Coal, reported	6 inches

To the west of Carbon Hill and Galloway, this seam of coal is not over 6 inches thick, and in places it appears to be almost entirely wanting. In several reported bore-holes in the south-east part of Marion County, it is about 6 inches thick.

The Newcastle Coal Seam.

This coal seam, called the *Guide Seam* in the central and western parts of the field, is of workable thickness on the outcrops only in places in the north-eastern and south-eastern parts of the field, where it is usually cut up by shale partings, and around Carbon Hill in the western part of the field. In the central and western parts of the field, it is usually less than 12 inches thick. It has been mined at Newcastle and Carbon Hill.

OUTCROPS OF NEWCASTLE COAL SEAM.

IN THE LITTLL BASIN.

This is the top coal seam of the Little Basin. It is here, so far as known, thin and split up into two or more parts with shales between. These parts are from about 1 to 16 inches thick and in places occupy from 12 to 14 feet of strata.

IN THE BIG BASIN.

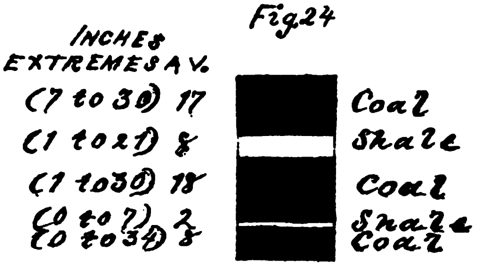

FIG. 24. *Average Section of the* New Castle Coal Seam *in the south-east outcrops. (This seam has in places at its bottom several other coal strata, usually thin.*

In the N. W. ¼ of S. E. ¼ of S. 18, T. 20, R. 6 W.

Coal smut...22 nches

In the N. E. ¼ of N. E. ¼ of S. 18, T. 20, R. 6 W.

Coal smut...16 inches

In the S. W. ¼ of S. W. ¼ of S. 4, T. 20, R. 6 W.

Coal smut	13 inches
Shale	1 inch
Coal smut	28 inches
Shale	2 inches
Coal smut	2 inches
Shale	8 inches
Coal smut	1 inches
Shale	2 inches
Coal smut	½ inch
Shale	1 inch
Coal smut	½ inch
Shale	1 inch
Coal smut	½ inch
Shale	2 inches
Coal smut	11 inchess
Clay	18 inches

In the N. W. ¼ of N. W. ¼ of S. 3, T. 20, R. 6 W.

Coal smut	7 inches
Shale	1 inch
Coal smut	26 inches
Shale	1 inch
Coal smut	3 inches
Shale	18 inches
Coal smut	½ inch
Shale	10 inches
Coal smut	6 inches
Shale	3 inches
Coal smut	2 inches

In the N. E. ¼ of N. W. ¼ of S. 19, T. 19, R. 5 W.

Coal smut, about	24 inches

In the S. E. ¼ of N. W. ¼ of S. 15, T. 17, R. 3 W.

Coal smut	15 inches

In the N. E. ¼ of N. E. ¼ of S. 11, T. 17, R. 3 W.

Coal, reported	36 inches

In the S. E. ¼ of N. W. ¼ of S. 1, T. 17, R. 3 W.

Sandstones.	
Shales	12 inches
Coal smut	5 to 6 inches
Shale	¼ inch
Coal smut	24 inches
Shale, just visible.	

This outcropping does not show probably the full thickness of the coal seam.

About 100 yards to the north-east of the last outcropping.

Shale.	
Coal smut	22 inches
Shale, clayey	18 inches
Coal smut	4 inches
Clay	77 inches
Coal and shale	11 inches

In the S. E. ¼ of N. W. ¼ of S. 1, T. 17, R. 3 W.

Coal	18 inches
Shale	9 inches
Coal	2 inches
Shale	1 inch
Coal	3 inches

In the S. E. ¼ of N. E. ¼ of S. 36, T. 16, R. 3 W.

Coal smut, about	15 nches
Shale, clayey	8 nches
Coal smut	5 nches

In a couple of places near Newcastle or in S. W. ¼ of N. W. ¼ of S. 17, T. 16, R. 2 W.

Coal, with thin shale parting in places	25 to 27 inches
Shale	2 to 6 inches
Coal	6 inches
Shale	3 to 6 inches
Coal	26 to 34

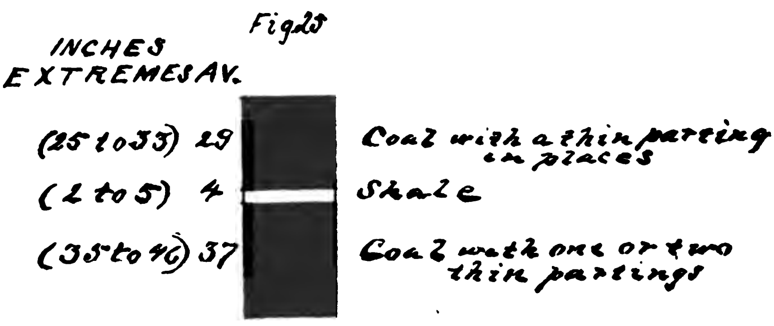
Fig25
INCHES
EXTREMES AV.
(25 to 33) 29
(2 to 5) 4
(35 to 46) 37
Coal with a thin parting in places
Shale
Coal with one or two thin partings

FIG. 25. *Average Section of the* New Castle Coal Seam *at New Castle.*

At mouth of *Old Slope at Newcastle* in N. E ¼ of N. W. ¼ of S. 17, T. 16, R. 2 W

Sandstone.	
Shale	4 inches
Coal	30 inches
Shale	5 inches
Coal	30 inches
Shale	1 inch
Coal	4 inches
Shale	2 inches
Coal	3 inches

In the S. W. ¼ of N. W. ¼ of S. 34, T. 15, R. 2 W.

Coal	3 to 4 inches
Shale	¼ inch
Coal	28 inches
Sandstone	1 to 2 inches
Coal	2 inches

In the S. W. ¼ of N. E. ¼ of S. 28, T. 15, R. 2 W.

Coal smut	¾ inch
Shale	¼ inch
Coal smut	¼ inch
Shale	4 to 5 inches
Coal smut	½ inch
Shale	¼ inch
Coal smut	4 to 5 inches
Shale	¼ inch
Coal smut	1 to 2 inches
Shale	¼ inch
Coal smut	3 to 4 inches
Shale	6 to 7 inches
Coal smut	¾ inch
Shale	¼ inch
Coal smut	6 inches
Shale	13 inches
Coal smut	1 inch
Shale	14 inches
Coal smut	2 to 3 inches

In the S. E. ¼ of S. 11, T. 15, R. 3 W.

Black Band Ore	4 inches
Shale	28 inches
Coal smut	24 inches
Shale	2 to 3 inches
Coal smut	6 to 7 inches
Shale	8 to 9 inches
Coal smut	3 inches
Shale	1 inch
Coal smut	¾ inch

In the N. E. ¼ of S. E. ¼ of S. 4, T. 15, R. 3 W.

Coal smut	10 inches
Shale	15 to 16 inches
Coal smut	14 inches

In the N. W. ¼ of S. W. ¼ of S. 16, T. 15, R. 3 W.

Coal smut	14 inches
Shale	1 to 2 inches
Coal smut	21 inches

In the S W. ¼ of S. W. ¼ of S. 23, T. 15, R. 4 W.

Coal smut	7 inches
Shale	21 inches
Coal smut	29 inches

This seam of coal in its outcrops along the Locust Fork of Black Warrior River and to the westward is known as the *Guide Seam.* To the west of Palos, it is seldom over *12 inches thick,* except around Carbon Hill where it is from about *30 inches to nearly 4 feet thick.* Its average thickness on the outcrop between Palos and Carbon Hill is something less than *12 inches.* Only those outcrops and bore-holes will be given in which this coal seam is over 12 inches thick.

In the N. W. ¼ of N. E. ¼ of S. 10, T. 16, R. 6 W.

Coal smut	13 inches

In the S. W. ¼ of N. W. ¼ of S. 34, T. 15, R. 6 W.

Coal smut	13 inches

In the S. W. ¼ of S. W. ¼ of S. 11, T. 15, R. 6 W.

Coal smut	16 inches

In the N. E. ¼ of N. W. ¼ of S. 19, T. 14, R. 8 W.

Coal smut	13 inches

In the S. E. ¼ of S. E. ¼ of S. 13, T. 14, R. 9 W.

Coal	24 inches.

In reported bore-hole in S. W. ¼ of S. 33, T. 13, R. 8 W.

Coal and shale	14 inches

In reported bore-hole in N. E. ¼ of S. E. ¼ of S. 34, T. 13, R. 8 W.

Coal	15 inches

Inthe N. E. ¼ of N. E. ¼ of S. 34, T. 13, R. 8 W.

Coal smut	18 inches

In reported bore-hole in N. E. ¼ of N. E. ¼ of S. 34, T. 13, R. 8 W.

Coal	18 inches
Shale, blue	3 inches
Coal and shaly *black band ore*	6 inches

In reported bore-hole in N. W. ¼ of S. 8, T. 14, R. 9 W.

Coal	24 inches

In the N. W. ¼ of S. E. ¼ of S. 7, T. 14, R. 8 W.

Coal	20 inches

In reported bore-hole in N. E. ¼ of S. 3, T. 14, R. 8 W.

Coal	18 inches

In an other reported bore-hole in same puarter section as last one.

Coal	26 inches

In the N. W. ¼ of N. W. ¼ of S. 3, T. 14, R. 9 W.

Coal, reported	24 inches

In reported bore-hole in S. E. ¼ of S. E. ¼ of S. 32, T. 13, R. 9 W.

Coal	31 inches

In reported bore-hole near center of S. 32, T. 13, R. 9 W.

Coal	39 inches

Outcrop in S. E. ¼ of S. W. ¼ of S. 33, T. 13, R. 9 W.

Coal	24 inches

In the S. W. ¼ of S. W. ¼ of S. 33, T. 13, R. 9 W.

Coal	24 inches

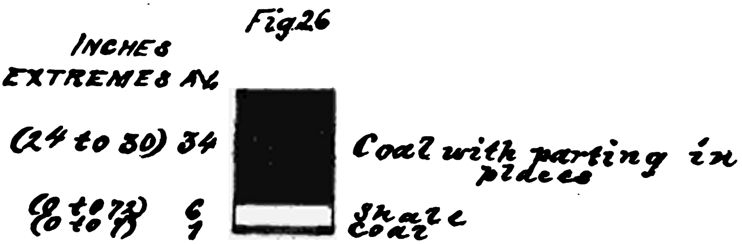

FIG. 26. *Average Section of the* New Castle Coal Seam *near Carbon Hill. (In this figure the upper coal ought to be from* (24 *to* 40) 34 *inches.)*

In reported bore-hole in N. W. ¼ of S. 31, T. 13, R. 9 W.

Coal	36 inches

At several outcrops in S. W. ¼ of S. E. ¼ of S. 25, T. 13, R. 10 W.

Shale, thick	
Coal	38 to 40 inches
Sandstone, shaly in places at top, about	6 feet
Coal	7 inches
Shale, with *coal* streaks	6 inches
Shale	12 inches
Coal in places	½ inch
Shale, about	18 inches
Coal	½ inch
Sandstone	12 inches

In the S. E. ¼ of S. W. ¼ of S. 25, T. 13, R. 10 W.

Coal	36 to 38 inches

In the *Bynum Drift* in the N. E. ¼ of S. W. ¼ of S. 25, T. 13, R. 10 W.

Coal	16 inches
Shale and slaty *coal*	1 to 2 inches
Coal	21 inches
Coal and sandstone	0 to 2 inches
Coal	6 inches
Shale	

At drift in S. E. ¼ of S. W. ¼ of S. 24, T. 13, R. 10 W.

Coal	21 inches
Shale and slaty *coal*	0 to 3 inches
Coal	11 inches
Coal and sandstone	2 inches
Coal	2 inches

At drift in N. E. ¼ of S. W. ¼ of S. 19, T. 13, R. 9 W.

Coal	36 inches.

In the S. W. ¼ of N. W. ¼ of S. 20, T. 13, R. 9 W.

Coal	36 inches

In reported bore-hole in S. W. ¼ of S. W. ¼ of S. 13, T. 13, R. 10 W.

Coal	30 inches

In reported bore-hole in N. E. ¼ of S. E. ¼ of S. 13, T. 13, R. 10 W.

Coal	6 inches
Shale	30 inches
Coal	30 inches

In N. E. ¼ of N. W. ¼ of S. 22, T. 13, R. 10 W.

Coal, reported	30 inches

To the west, this coal seam, in all of the outcrops seen, is less than 12 inches thick.

seams,
Cardiff,
. Map.
e thin
ting in
ıer and
n part
of the
0 to 10
ninous
ıt is in
ıams of
ched.
In the
ıo be at
'er, by
t along
ıey can
Creek,
to the
up by
Brook-
where
south-
ıst side
They
wn the
t river,
ıe Coal
lley
ıd

CHAPTER IV.

THE PRATT GROUP OF COALS.

This important group of coals has the following five coal seams, named in an ascending order: *Gillespy*, *Curry*, *American*, *Cardiff*, and *Pratt*. See Plates I and IV and sections 1, 2, and 3, on Map. The two lower seams (Gillespy and Curry), however, are quite thin in the central and western parts of the field and may be wanting in places. The Cardiff (Fire Clay) and Pratt seams come together and form the *Corona*, etc., and the American Seam, in the western part of the field, splits up into two thin seams. The lower part of the Pratt in the Corona Seam is in places a *cannel coal* from 0 to 10 inches thick and the whole of the Corona is in places a bituminous shale. The American Seam has a bony stratum in it that is in places a semi-cannel coal, sometimes ferruginous. All the seams of this group thin out as the western edge of the field is approached.

This group of coals does not occur in the Little Basin. In the Big Basin, its most south-west visible outcrops may be said to be at the Dudley Old Slope near Clements. They are hid, however, by superficial deposits to the north-east of this old slope, except along the water courses, to near Davis Creek. From this creek, they can be traced to the north-east to Cinnamon Branch, near Valley Creek, where they become engulfed in a fault for some 8 miles to the north-east, to near Dolomite. From Dolomite, they extend up by the Pratt slopes and drifts and thence around by Coalburg, Brookside, Brazil, Cardiff, and Blossburg, on down to Toadvine, where they bend around the south-west end of the extension to the south-west of the Blountsville Anticlinal and run up the north-west side of the anticlinal and around the head waters of Coal Creek. They cross over the divide between the rivers and continue down the Mulberry Fork to the mouth of Lost Creek and then up that river, on the west side, to America and on across the country to the Coal Valley, Patton, Deer Lick, Corona, Lockhart, and Mountain Valley mines, and thence on around the head waters of North River and down Box's Creek to the Sipsey River where they become covered up for good by the superficial deposits.

The Pratt Seam is the principal seam of the group except in the central part of the field where it is supplanted in importance by the American Seam. It, including the Corona, must have some 500 miles of outcrops. It underlies some 1500 square miles, in the counties of Jefferson, Walker, Fayette and Tuscaloosa.

The combined coal of this group on the outcrops varies in thickness from about 3 to 16 feet, with an everage thickness of about 8 feet for the whole length of outcrops. Two of its seams (Pratt and American) are worked on a commercial scale. Their coal output, 3,528,699 tons for 1898, is nearly three times that of the group with the next largest output.

THE GILLESPY COAL SEAM.

This seam can hardly be said to be of workable thickness in any of the outcrops seen. It is reported, however, to have been worked some little by a drift to the north-west of Newcastle. The outcrops are thickest in the eastern part of the field, thinning out towards the west. Some of the bore-holes show the seam to be of workable thickness and to be split up until its upper and lower parts are as much as 75 feet apart.

OUTCROPS OF GILLESPY COAL SEAM.

The outcrops of this coal seam, as a general thing, are less than *10 inches thick.* Only those outcrops and bore-holes will be mentioned in which the coal is over 12 inches thick.

In reported bore-hole at Sulphur Springs Church 7 miles west of Birmingham

Clay, with fossil plants	
Coal	40 inches
Clay, arenaceous	12 inches
Sandstone, coarse gray	41 inches
Coal, mixed with clay	20 inches
Clay, arenaceous, with seams of hard black slate	96 inches
Sandstone, coarse gray, with *seams of coal*	84 inches
Sandstone, fine grain, dark, with coal plants	48 inches
Coal	12 inches
Clay	

Outcrops on G. P. Ry. on each side of Brookside in S. W. corner of S. 13, T. 16, R. 4 W.

Coal	13 to 16 inches

In the N. W. ¼ of S. E. ¼ of S. 26, T. 15, R. 3 W.

Coal, reported	18 inches

In the S. E. ¼ of N. W. ¼ of S. 13, T. 16, R. 5 W.

Coal	1 to 2 inches
Shale	¼ inch
Coal	2 inches
Shale	½ inch
Coal	1 to 2 inches
Shale	¾ inch
Coal	14 inches

In the N. E. ¼ of N. E. ¼ of S. 15, T. 17, R. 6 W.

Sandstone, flaggy	
Coal smut	11 to 13 inches
Shale	4 to 5 inches
Coal smut	5 to 6 inches

In the S. W. ¼ of N. E. ¼ of S. 25, T. 17, R. 6 W.

Coal smut	5 inches
Shale	2 inches
Coal smut	5 to 6 inches

THE CURRY COAL SEAM.

This Coal Seam is of workable thickness in only a couple of the outcrops seen. It is thickest in the eastern part of the field, thinning out towards the west. It is reported to have been worked some little by a drift to the northwest of Newcastle.

OUTCROPS OF CURRY COAL SEAM.

In reported bore-hole at Sulphur Spring Church, 7 miles west of Birmingham.

Coal, with sulphur balls	16 inches

Outcrop in S. W. ¼ of N. W. ¼ of S. 23, T. 16, R. 3 W.

Coal	30 inches

In the N. E. ¼ of S. W. ¼ of S. 18, T. 16, R. 2 W.

Coal	18 inches

In the S. W. ¼ of S. E. ¼ of S. 35, T. 15, R. 3 W.

Coal	11 inches

In the S. E. ¼ of N. E. ¼ of S. 3, T. 16, R. 3 W.

Coal	22 inches.

In the N. E. ¼ of S. W. ¼ of S. 10, T. 16, R. 3 W.

Coal	19 inches

In the S. W. ¼ of N. W. ¼ of S. 10, T. 16, R. 3 W.

Coal	25 inches.

In the N. E. ¼ of S. W. ¼ of S. 8, T. 16, R. 3 W.

Coal	8 inches

In the N. E. ¼ of S E. ¼ of S. 32, T. 15, R. 3 W.

Coal, over	18 inches

In the N. E. ¼ of N. E. ¼ of S. 30, T. 15, R. 3 W.

Coal	17 inches

In the N. E. ¼ of S. E. ¼ of S. 15, T. 16, R. 4 W.

Coal	10 to 11 inches
Shale	23 inches
Coal	4 inches

In the S. W. ¼ of S. E. ¼ of S. 18, T. 17, R. 5 W.

Coal	13 inches
Shale	3 to 4 inches
Coal	1 to 2 inches
Shale	4 inches
Coal	1 inch
Shale	2 inches
Coal	1 inch

The coal seam in its outcrops and in the bore-holes to the west, so far as they are known, is not over 6 inches thick.

THE AMERICAN COAL SEAM.

This coal seam is called the *Double Seam* in the eastern part of the field because there it is in two separate benches that are usually several feet apart. Each of these benches is in places of workable thickness. The lower bench is sometimes itself divided up into two benches, thus dividing the whole seam up into three separate benches. In the central part of the field, however, in places none of these benches are well defined, being at most within a few inches of each other, making the seam as a whole in these places one of the thickest and best in the field. As the western part of the field is approached, the seam dies out as it splits up into two thin seams, and so in the western part of the field it is of no value, consisting of two thin seams 10 to 15 feet apart. Its coal is said to make fine coke. It is commercially mined only at America, and had an output of about 62,000 tons in 1898.

OUTCROPS OF AMERICAN COAL SEAM.

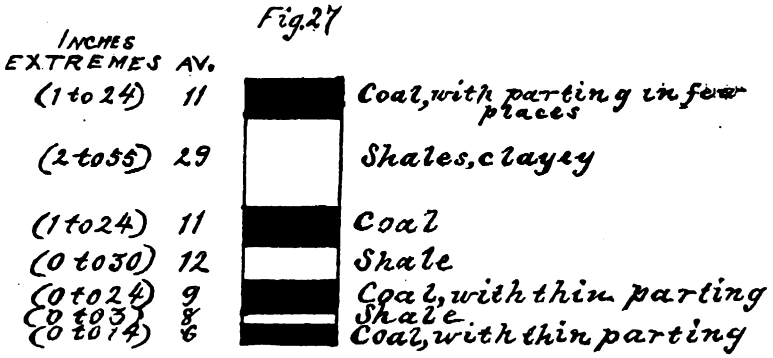
Fig.27
INCHES
EXTREMES AV.
(1 to 24) 11 Coal, with parting in few places
(2 to 55) 29 Shales, clayey
(1 to 24) 11 Coal
(0 to 30) 12 Shale
(0 to 24) 9 Coal, with thin parting
(0 to 3) 8 Shale
(0 to 14) 6 Coal, with thin parting

FIG. 27. *Average Section of the* American Coal Seam *in the eastern part of the Warrior Coal Field.*

In the N. E. ¼ of N. W. ¼ of S. 19, T. 19, R. 5 W.

Coal, reported	36 inches

In the *Wheeling Slope* in N. W. ¼ of S. E. ¼ of S. 16, T. 18, R. 4 W.

Coal	24 inches.
Shale	48 inches
Coal	24 inches

In reported bore-hole in S. E. ¼ of N. E. ¼ of S. 35, T. 17, R. 4 W.

Coal	16 inches
Shale	7 inches
Coal	2 inches
Shale	55 inches
Coal	19 inches
Shale	28 inches
Coal	5 inches
Shale	½ inch
Coal	15 to 16 inches
Shale	5 inches
Coal	1 inch
Shale	1 inch
Coal	8 inches

In reported bore-hole at Sulphur Spring Church 7 miles west of Birmingham.

Coal	24 inches
Clay	87 inches
Coal	20 inches
Clay	21 inches
Coal	42 inches

In reported bore-hole about one mile south of Coalburg.

Coal	2 inches
Shale	35 inches
Coal	22 inches.
Shale	30 inches
Coal	3 inches
Shale	8 inches
Coal	12 inches

Outcrop in the S. W. ¼ of S. W. ¼ of S. 13, T. 16, R. 3 W.

Coal smut	1 inch
Shale	3 inches
Coal smut	1 to 2 inches
Shale	¾ inches
Coal smut	3 inches
Shale	½ inch
Coal smut	1 to 2 inches
Shale	¼ inch
Coal smut	2 to 3 inches
Shale	½ inch
Coal smut	5 inches

Some 50 yards to the north-east of the last outcropping.

Coal smut	2 inches
Shale	2 inches
Coal smut	3 to 4 inches
Shale	¼ inch
Coal smut	7 inches
Shale	¼ inch
Coal smut	4 inches
Shale	½ inch
Coal smut	4 to 5 inches

In the S. E. ¼ of S. W. ¼ of S. 15, T. 16, R. 3 W.

Coal smut	25 to 26 inches
Shale	4 to 5 inches
Coal smut	1 to 2 inches
Shale	1 to 2 inches
Coal smut	2 inches

In the S. E. ¼ of S. E. ¼ of S. 14, T. 16, R. 3 W.

Coal smut	22 inches
Shale	4 to 5 inches
Coal smut	3 inches

In the S. W. ¼ of S. E. ¼ of S. 32, T. 15, R. 3 W.

Coal smut	22 inches
Shale	3 inches
Coal smut	10 to 11 inches

In the N. W. ¼ of N W. ¼ of S. 11, T. 16, R. 4 W.

Coal smut	23 inches

In the S. E. ¼ of N. W. ¼ of S. 16, T. 16, R. 4 W.

Coal smut	18 inches
Shale	1 inch
Coal smut	16 inches

In the S. W ¼ of S. W. ¼ of S. 12, T. 16, R. 4 W.

Coal smut	13¾ inches

In the N W. ¼ of S E. ¼ of S. 13, T. 15, R. 5 W.

Coal smut	16 to 17 inches
Shale	4 inches
Coal smut	2 to 3 inches

In the N. E. ¼ of S. E. ¼ of S. 13, T. 16, R. 5 W.

Coal smut	5 inches
Shale	½ inch
Coal smut	2 inches
Shale	2 to 3 inches
Coal smut	3 inches
Shale	6 to 7 inches
Coal smut	4 to 5 inches

In the S. E. ¼ of N. W. ¼ of S. 16, T. 16, R. 4 W.

Coal smut	18 inches
Shale	1 inch
Coal smut	16 inches

In the S. E. ¼ of S. E. ¼ of S. 13, T. 16, R. 5 W.

Coal smut	16 to 17 inches
Shale	4 inches
Coal smut	2 to 3 inches

Along railroad between tunnel and Blossburg.

Coal	12 to 14 inches
Shale	36 to 60 inches
Coal	0 to 6 inches

In reported bore-hole between Blossburg and Adamsville.

Coal	18 inches
Shale	4 inches
Coal	4 inches

In the S. W. ¼ of N. E. ¼ of S. 26, T. 16, R. 5 W.

Coal smut	36 inches

In the N. W. ¼ of S. E. ¼ of S. 26, T. 16, R. 5 W.

Coal smut	26 inches
Sandstones, flaggy	48 to 60 inches
Coal smut, over	12 inches

In the S. E. ¼ of S. W. ¼ of S. 26, T. 16, R. 5 W.

Coal smut	32 inches

In the N. E. ¼ of N. W. ¼ of S. 34, T. 16, R. 5 W.

Coal smut	15 inches
Shale, clayey	42 inches
Coal smut	11 inches

In the N. W. ¼ of S. E. ¼ of S. 4, T. 17 R. 5 W.

Coal smut	20 inches
Shale	1 to 2 inches
Coal smut	5 inches
Shale	1 inch
Coal smut	10 to 11 inches

In the N. W. ¼ of S. W. ¼ of S. 9, T. 17, R. 5 W.

Coal smut	19 to 20 inches
Shale	2 inches
Coal smut	15 inches
Shale	9 inches
Coal smut	13 inches

In the N E. ¼ of S. W. ¼ of S. 8, T. 17, R. 5 W.

Soil	
Coal smut	7 inches
Dirty streak	
Coal smut	12 to 13 inches
Shale	3 to 4 inches
Coal smut	11 to 12 inches
Shale	4 to 5 inches
Coal smut	16 to 18 inches

In the S. E. ¼ of S. W. ¼ of S. 8, T. 17, R. 5 W.

Coal smut	24 inches
Shale	3 inches
Coal smut	14 inches
Shale	3 inches
Coal smut	13 inches

In the S. E. ¼ of S. E. ¼ of S. 19, T. 17, R. 5 W.

Coal smut	25 to 26 inches
Shale	8 to 9 inches
Coal smut	25 to 27 inches

In the N. E. ¼ of S. E. ¼ of S. 25, T. 17, R. 6 W.

Coal smut	24 inches
Shale, debris	7 to 8 feet
Black Band Ore, coaly	7 to 8 inches
Coal smut	22 inches

In the N. W. ¼ of S. W. ¼ of S. 10, T. 18, R. 6 W.

Coal smut	17 inches
Shale	5 inches
Coal smut and shale	38 inches

This may not represent the full thickness of the outcrop.

In the N. W. ¼ of N. E. ¼ of S. 28, T. 17, R. 6 W.

Coal	18 inches

In the S. W. ¼ of S. E. ¼ of S. 22, T. 17, R. 6 W.

Coal smut	21 inches
Dirt	6 to 8 inches
Coal smut	2 inches
Shale	¾ inch
Coal smut	2 inches

In the N. W. ¼ of N. E. ¼ of S. 27, T. 17, R. 6 W.

Coal smut	13 inches
Clay	3 inches
Coal smut	6 inches
Clay	2 inches
Coal smut	1 inch

In the S. W. ¼ of N. E. ¼ of S. 15, T. 17, R. 6 W.

Coal smut	26 inches
Shale	3 inches
Coal smut	13 inches

In the N. E. ¼ of N. E. ¼ of S. 15, T. 17, R. 6 W.

Coal smut	28 to 30 inches
Clay	3 to 4 inches
Coal smut	13 to 14 inches

In the S. W. ¼ of S. E. ¼ of S. 27, T. 17, R. 6 W.

Coal smut	19 inches

In the S. W. ¼ of S. W. ¼ of S. 15, T. 17, R. 6 W.

Coal smut	7 to 8 inches
Mineral charcoal	streak
Coal smut	2 to 3 inches
Shale, in places	streak
Coal	7 inches
Shale	¾ to 1 inch
Coal	6 to 7 inches
Shale	¼ inch
Coal	9 to 10 inches
Shale	5 to 6 inches
Coal	4 inches
Shale and sandstone	18 inches
Shale with some *coal*	7 to 8 inches
Shale, bluish	3 to 4 inches
Coal	1 to 2 inches
Shale	1 to 4 inches
Coal	17 to 18 inches
Shale, visible	2 inches

In the N. W. ¼ of S. W. ¼ of S. 10, T. 17, R. 6 W.

Coal	20 inches
Shale	0 to 3 inches
Coal	21 inches

In the S. W. ¼ of N. W. ¼ of S. 11, T. 17, R. 6 W.

Coal smut	30 inches

This is merely the top bench.

In the S. E. ¼ of N. E. ¼ of S. 2, T. 17, R. 6 W.

Coal	36 inches
Clay	6 inches
Coal	4 inches

In the S. W. ¼ of N. W. ¼ of S. 2, T. 17, R W.

Coal	11 to 18 inches
Shale	½ to 1 inch
Coal	26 to 27 inches
Shale	2 to 3 inches
Coal	4 to 5 inches
Shale	20 to 21 inches
Coal	15 inches

In the N. W. ¼ of N. W. ¼ of S. 23, T. 16, R. 6 W.

Coal	16 to 17 inches
Shale	1 inch
Coal	13 to 14 inches

In the N. E. ¼ of S. E. ¼ of S. 20, T. 16, R. 6 W.

Coal	14 inches
Shale	1 to 2 inches
Coal	11 to 12 inches

In the S. W. ¼ of S. W. ¼ of S. 18, T. 16, R. 6 W.

Coal	11 inches
Parting	½ inch
Coal	9 inches
Parting	1 inch
Coal	32 inches
Clay	6 inches
Coal	streak

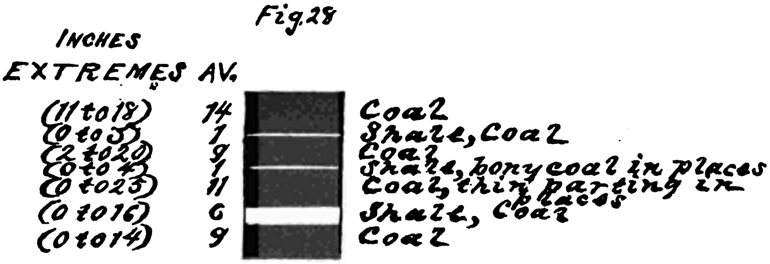

FIG. 28. *Average Section of the* American Coal Seam *in the central portion of the Warrior Coal Field.*

In Fanny's Branch near its mouth in S. W. ¼ of S. E. ¼ of S. 23, T. 16, R. 7 W.

Coal smut	12 inches
Shale	1 to 2 inches
Coal smut	5 inches
Shale	4 inches
Coal smut	2 to 3 inches
Shale	¼ inch
Coal smut	1 to 2 inches
Shale	¼ inch
Coal smut	1 to 2 inches
Shale	1 inch
Coal smut	5 to 6 inches
Shale, with *coal* streaks	11 to 12 inches
Coal smut	6 to 7 inches
Shale, visible	6 to 8 inches

In the S. W. ¼ of S. E. ¼ of S. 14, T. 16, R. 7 W.

Coal	15 to 18 inches
Shale, coaly	¾ inch
Coal	13 to 20 inches
Shale	¼ to 1 inch
Coal	2 to 5 inches
Shale	¼ to 2 inches
Coal	2 to 3 inches
Shale, with *coal* streaks	5 to 8 inches
Coal	11 to 14 inches

In the N. W. ¼ of S. E. ¼ of S. 13, T. 16, R. 7 W.

Coal	15 inches
Parting	0 to 2 inches
Coal	2 inches
Parting	1 to 2 inches
Coal	16 to 17 inches
Parting	¾ to 1 inch
Coal	5 to 6 inches
Parting	5 to 6 inches
Coal	11 to 12 inches
Shale, visible	12 inches

In the N. W. ¼ of S. E. ¼ of S. 18, T. 16, R. 6 W.

Coal	15 inches
Shale, irregular	0 to ½ inch
Coal	2 inches
Shale, irregular streak	
Coal	26 inches
Shale, clayey	16 inches
Coal	12 inches

In the N. E. ¼ of N. W. ¼ of S. 17, T. 16, R. 6 W.

Coal smut	13 inches
Shale	1 inch
Coal smut	2 inches
Shale	¾ inch
Coal smut	5 to 6 inches
Shale	¾ inch
Coal smut	6 to 7 inches
Shale, clayey, visible	15 inches

This outcrop probably does not show the full thickness of the coal seam.

In the S. W. ¼ of S. E. ¼ of S. 7, T. 16, R. 6 W.

Coal, with thin parting near bottom	39 to 40 inches
Shale, clayey	3 to 4 inches
Coal, with thin partings	19 inches

In the N. E. ¼ of N. W. ¼ of S. 30, T. 15, R. 6 W.

Coal	17 to 18 inches
Shale	2 inches
Coal	14 to 15 inches
Shale	⅝ inch
Coal	11 to 12 inches

In the N. E. ¼ of S. E. ¼ of S. 29, T. 15, R. 6 W.

Coal smut	36 inches

This probably does not show the full thickness of the seam.

In the N. E. ¼ of S. W. ¼ of S. 36, T. 15, R. 7 W.

Coal	15 to 16 inches
Shale	1 inch
Coal	12 to 13 inches
Shale	streak
Coal	4 to 5 inches
Shale	2 to 3 inches
Coal	10 inches
Shale, *coaly*	5 to 8 inches

In the S. E. ¼ of N. E. ¼ of S. 23, T. 15, R. 7 W.

Debris.	
Coal smut	14 inches
Coal with streaks of *bony coal*	1 to 2 inches
Coal smut	16 to 17 inches
Shale	1 to 2 inches
Coal smut	10 inches

At and in the *American Mines* in E. ½ of S. W. ¼ of S. 23, T. 15, R. 7 W.

Coal	14 to 15 inches
Shale	2 to 3 inches
Coal, with streak of *bony coal* near center	12 to 13 inches
Shale, clayey, mining	2 to 8 inches
Coal	6 to 12 inches

About in the N. E. ¼ of N. E. ¼ of S. 34, T. 15, R. 7 W.

Coal	3 to 4 inches
Mineral charcoal, streak.	
Coal, with mineral charcoal streaks	7 to 8 inches
Mineral charcoal, streak.	
Coal	20 to 21 inches
Shale	2 inches
Coal	2 inches

At *Persimmon Lick Drift* in S. E. corner of S. 21, T. 15, R. 7 W.

Coal	14 to 17 inches
Shale, *coaly*	½ to 1 inch
Coal, with some *bony coal* at top	28 to 29inches

At the *Garrington Spring* in S. E. ¼ of N. E. ¼ of S. 36, T. 15, R. 8 W.

Coal	8 to 9 inches
Shale	1 to 3 inches
Coal	3 inches
Bony coal	3 inches
Coal	30 to 31 inches

In the N. E. ¼ of S. W. ¼ of S. 32, T. 15, R. 7 W.

Coal	15 inches
Mineral charcoal streak.	
Coal.	34 inches

In the S. W. ¼ of N. E. ¼ of S. 32, T. 15, R. 7 W.

Coal smut	22 inches
Parting	9 to 10 inches
Coal smut	5 inches

This may not represent the full thickness of the coal seam.

In the S. E. ¼ of N. E. ¼ of S. 5, T. 16, R. 7 W.

Coal smut	15 inches
Shale	1 inch
Coal smut	6 inches
Shale	1 inch
Coal smut	6 inches
Shale	½ inch
Coal smut.	18 to19 inches

In the N. E. ¼ of N. E. ¼ of S. 34, T. 15, R. 8 W.z

Coal smut	0 to 21 inches
Shales, about	48 inches
Coal smut	2 inches
Shales, about	48 inches
Coal smut	2 inches
Shales, clayey	19 to 20 inchse.
Coal smut	3 inches
Shale, clayey, about	48 inches
Coal, with thin parting near top	29 to 34 inches

In the N. E. ¼ of S. W. ¼ of S. 27, T. 15, R. 8 W.

Coal smut	2 to 3 inches
Shale, about	36 inches
Coal smut	3 inches
Shale, about	12 inches
Coal smut	3 inches
Shales, clayey	9 to 10 feet
Coal smut	9 inches
Shale, clayey	¾ to 1 inch
Coal	9 to 10 inches

Outcrop on Cane Creek near center of S. W. ¼ of S. 20, T. 15, R. 8 W.

Sandstone, slabby, flaggy.	
Sandstone, gnarly with irregular thin *coal streaks*	2 to 3 inches
Shale, black	1 to 2 inches
Coal.	4 to 5 inches
Black Band Ore, coaly and shaly, about	3 inches
Shale, compact	5 to 6 feet
Coal, about	2 inches
Shale, clayey, to water level, about	4 feet

The last three sections show how this seam is thinning out and splitting up towards the west. In none of its outcrops that have been seen still farther to the west is s much as 10 inches thick.

THE FIRE CLAY (CARDIFF) COAL SEAM.

This coal seam has been called the *Fire Clay Seam* because its outcrops are characterized in many places by a thick underbed of light colored, plastic clay. It is a quite uniform seam of usually solid coal without partings. In a few of its outcrops it is 2 feet and over in thickness. It unites with the overlying (Pratt) seam to form the *Corona Seam.* As a separate seam, it has been worked some little at Cardiff for local consumption and in Days' Gap, near Oakman. As the bottom part of the Corona Seam, it is mined at the Gas Light, Coal Valley, Mountain Valley, Patton, Deer Head, Corona, and Lockhart mines.

OUTCROPS OF FIRE CLAY (CARDIFF) COAL SEAM.

In the S. W. ¼ of S. W. ¼ of S. 35, T. 20, R. 7 W.

Coal....... ....15 inches

In the N. E. ¼ of N. W. ¼ of S. 19, T. 19, R. 5 W.

Coal... ....12 inches

In Dolomite Slope No. 1 in N. W. ¼ of S. E. ¼ of S. 18, T. 18, R. 4 W.

Coal........ ....18 inches

In reported boring in S. E. ¼ of N. E. ¼ of S. 35, T. 17, R. 4 W.

Coal ....15 nchels

In reported boring at Sulphur Spring Church, 7 miles west of Birmingham.

Coal....... ....16 inches

In reported boring about 1 mile south of Coalbury.

Coal...... ....15 inches

Outcrop in the S. E. ¼ of S. E. ¼ of S. 25, T. 16, R. 4 W.

Coal........... ....20 inches

In the N. E. ¼ of N. E. ¼ of S. 26, T. 16, R. 4 W.

Coal....... ....19 inches

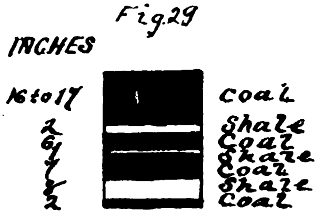

FIG. 29. *Section of* Fire Clay (Cardiff) Coal Seam, *at Cardiff, in the N. E.* ¼ *of S. E.* ¼ *of S.* 15, *T.* 16, *R.* 4 *W.*

In reported boring between Blossburg and Adamsville.

Coal... ....12 inches

Outcrop in the S. W. ¼ of N. W. ¼ of S. 31, T. 16, R. 4 W.

Coal smut.............................22 inches

In the S. E. ¼ of S. W. ¼ of S. 13, T. 16, R. 5 W.

Coal............................. 6 inches

In the N. W. ¼ of N. W. ¼ of S. 34, T. 16, R. 5 W.

Coal.............................16 inches

In the S. E. ¼ of N. W. ¼ of S. 3, T. 17, R. 5 W.

Coal.............................18 inches

In the N. W. ¼ of S. E. ¼ of S. 4, T. 17, R. 5 W.

Coal.............................18 inches

In the S. E. ¼ of N. E. ¼ of S. 8, T. 17, R. 5 W.

Coal.............................18 inches

In the S. W. ¼ of S. E. ¼ of S. 8, T. 17, R. 5 W.

Coal.............................19 inches

In the N. E. ¼ of N. W. ¼ of S. 20, T. 17, R. 5 W.

Coal.............................19 inches

In the S. W. ¼ of S. W. ¼ of S. 15, T. 17, R. 6 W.

Coal.............................25 inches

In the S. E. ¼ of N. W. ¼ of S. 15, T. 17, R. 6 W.

Coal.............................22 inches

In the S. W. ¼ of N. W. ¼ of S. 11, T. 17, R. 6 W.

Coal.............................18 inches

In the N. E. ¼ of N. W. ¼ of S. 2, T. 17, R. 6 W.

Coal.............................20 inches

In the S. E. ¼ of N. E. ¼ of S. 2, T. 17, R. 6 W.

Coal.............................20 inches

In the N. W. ¼ of S. E. ¼ of S. 13, T. 16, R. 7 W.

Coal.... ....19 inches

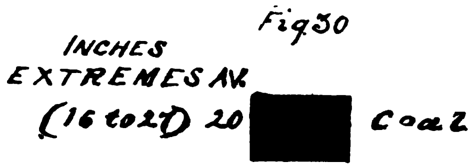

FIG. 30. *Average Section of the* Fire Clay (Cardiff) Coal Seam, *in the central part of the Warrior Coal Field.*

In the N. E. ¼ of S. W. ¼ of S. 18, T. 16, R. 6 W.

Coal........... ....27 inches

In the N. W. ¼ of S. E. ¼ of S. 18, T. 16, R. 6 W.

Coal....... ....17 inches

In the N. W. ¼ of S. W. ¼ of S. 17, T. 16, R. 6 W.

Coal........ ....22 inches

In the N. E. ¼ of N. W. ¼ of S. 1, T. 16, R. 7 W.

Coal...... ....17 inches

In the S. E. ¼ of S. W. ¼ of S. 19, T. 15, R. 6 W.

Coal...... ....16 inches

In the N. E. ¼ of S. W. ¼ of S.22, T. 15, R. 7 W.

Coal, about...... ....14 inches

In the south-east corner of S. 28, T. 15, R. 7 W.

Coal... ....12 inches

In the N. W. ¼ of S. E. ¼ of S. 31, T. 15, R. 7 W.

Coal..... ....11 inches

In the S. W. ¼ of S. E. ¼ of S. 25, T. 15, R. 8 W.

Coal, shaly, seemingly about....... .... 6 inches
Shale, clayey, about....... ....18 inchse
Coal..... .... 5 inches

In the S. E. ¼ of N. E. ¼ S. 36, T. 15, R. 8 W.

Coal smut	2 inches
Shale	7 inches
Coal smut	6 inches

In northern part of N. E. ¼ of S. 2, T. 16, R. 8 W.

Coal	½ to 2 inches
Shales	5 to 6 feet
Coal	14 inches

In the N. W. ¼ of N. E. ¼ of S. 34, T. 15, R. 8 W.

Coal	18 inches

West of the last some 200 yards.

Coal	19 inches

In the N. E. ¼ of S. W. ¼ of S. 27, T. 15, R. 8 W.

Coal	5 inches

In Day's Cap in S. E. ¼ of S. E. ¼ of S. 29, T. 15, R. 8 W.

Coal	20 inches

This seam and the overlying (Pratt) seam come together and form the Coal Valley, Patton, and Corona seam, the strata between thinning out. This latter seam however between Coal Valley and Patton is split into the two seams to the south of a line connecting these two places. The following outcrops are of the *under split,* the portion corresponding to the Cardiff (Fire Clay) Seam.

In the S E ¼ of N. W. ¼ of S. 31 T 15, R. 8 W.

Coal, shaly on top	21 inches
Shale	½ inch
Coal	2 inches

In the N. W. ¼ of S. E. ¼ of S. 36, T. 15, R 9 W.

Coal smut	18 inches

In the S. E. ¼ of S. W. ¼ of S. 36, T. 15, R. 9 W.

Coal smut	18 inches

In the N. E. ¼ of S. E. ¼ of S. 35, T. 15, R. 9 W.

Coal, shaly in places	21 inches
Shale, clayey	4 to 5 inches
Coal	½ inch

In the N. W. ¼ of N. W. ¼ of S. 35, T. 15, R. 8 W.

Coal	21 inches
Shale, clayey	4 inches
Coal	1 to 2 inches

THE PRATT COAL SEAM.

This coal seam, because of its preponderating output, has been since 1877 the principal coal seam of the Warrior Coal Field. It is thickest, as a general thing, in the eastern part of the field, though along its whole line of outcrops as a separate seam it is quite uniform, except as this line curves around the south-west end of the Blountsville Anticlinal, in the neighborhood of Toadvine, where the seam in places is only a few inches thick and in other places may be wanting. It unites at Coal Valley with the underlying (Cardiff) seam to form the *Corona*, etc., seam. The Corona Seam thins out towards the west, being usually less than 12 inches thick in its most western outcrops. The Pratt, as a separate seam, is mined at all of the Dolomite, Pratt Mines, Coalburg, Brazil, Cardiff, and Blossburg mines, and as the upper part of the Corona Seam at the Gas Light, Coal Valley, Mountain Valley, Patton, Deer Head, Corona, and Lockhart mines. It is a fine coking coal and is used mostly for this purpose. Its output for 1898, about 3,466,699 tons, was more than that of all the other coal seams of the Warrior Field together.

OUTCROPS OF THE PRATT COAL SEAM.

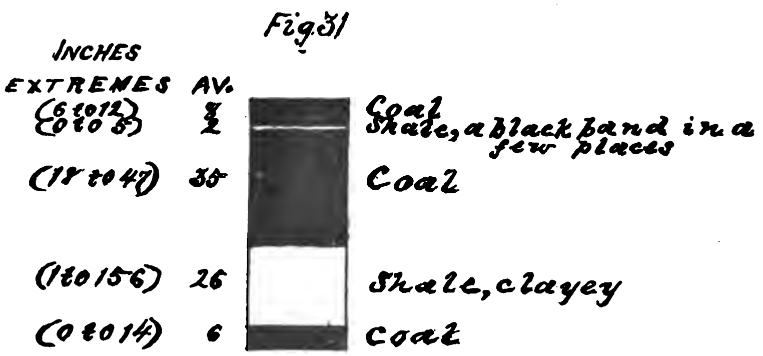

FIG. 31. *Average Sectioh of the* Pratt Coal Seam *in the eastern part of the Warrior Coal Field.*

Reported section of coal seam in *Dudley Old Slope* in S. E. ¼ of N. W. ¼ of S. 32, T. 21, R. 7 W.

Coal, shaly	6 to 8 inches
Shale, clayey	6 inches
Coal	13 inches
Clay	½ inch
Coal	12 inches
Clay	18 to 24 inches
Coal with shale	8 inches

In the S. W. ¼ of N. E. ¼ of S. 16, T. 21, R. 7 W.

Coal	2 inches
Shale	1 inch
Coal	26 inches

The above two outcrops may not be of this seam of coal, as the Pratt Group can not be traced so far to the south-west, because of the superficial covering.

On Suck Branch in N. E. ¼ of N. W. ¼ of S. 19, T. 19, R. 5 W.

Coal smut, may thicken	35 inches
Shale, clayey	18 inches
Coal smut	30 inches
Shale, clayey	36 inches
Coal smut	streak.

In *Dolomite Mines* in N. W. ¼ of S. E. ¼ of S. 16, T. 16, R. 4 W.

Coal	10 to 12 inches
Shale, hard, black	2 to 3 inches
Coal	7 to 9 inches
Bash, coal and shale	1 to 4 inches
Coal	32 to 34 inches
Clay	36 to 72 inches
Coal	10 to 14 inches

In the N. E. ¼ of N. E. ¼ of S. 16, T. 18, R. 4 W.

Coal smut	10 inches
Shale	3 inches
Coal smut	48 inches
Shale, clayey	36 inches
Coal smut	14 inches

In the N. E. ¼ of N. E. ¼ of S. 16, T. 16, R. 4 W

Coal	6 inches
Shale, clayey	2 to 3 inches
Coal	5 to 6 inches
Shale	1 to 2 inches
Coal	30 inches

In reported bore-hole on head of Camp Branch.

Coal	54 inches

In reported bore-hole 4000 yards back of Slope No. 4, Pratt Mines.

Coal	8 inches
Shale	2 inches
Coal	42 inches
Shale	1 inch
Coal	4 inches

In reported bore-hole at Sulphur Spring Church, 7 miles west of Birmingham.

Coal	54 inches

In Slope No. 3, Pratt Mines, in S. W. ¼ of S. W. ¼ of S. 30, T. 17, R.3 W.

Coal	10 inches
Shale	2 inches
Coal	44 inches
Clay	2 to 24 inches
Coal	1 to 12 inches

In Slope No. 1, Pratt Mines, in north-east corner of S. 30, T, 17, R. 3 W.

Coal	10 inches
Shale	2 inches
Coal	46 inches

In Shaft No. 1, Pratt Mines, in N. E.¼ of S. W. ¼ of S. 19, T. 17, R. 3 W.

Coal	7 to 10 inches
Shale	1 to 2 inches
Coal	42 to 47 inches
Shale, soft, clayey	3 inches
Shale, clayey, reported	10 feet
Coal	5 to 6 inches

In *Slope No. 2, Pratt Mines*, in S. E. ¼ of S. W. ¼ of S. 17, T. 17, R. 3 W.

Coal	7 to 8 inches
Shale	2 to 3 inches
Coal	32 inches
Shale, clayey	3 inches
Coal	5 to 6 inches

In the N. W. ¼ of S. E. ¼ of S. 17, T. 17, R. 3 W.

Coal	8 to 9 inches
Shale	2 to 3 inches
Coal	41 to 42 inches

In *Pratt Mines Drifts* in S. 9, T. 17, R. 3 W.

Shale, soft, in places *mother of coal*	1 to 6 inches
Coal	6 to 8 inches
Shale	0 to 2 inches
Coal	40 to 47 inches
Shale	1 to 5 inches
Coal	5 to 8 inches

In the *Stockton Mine* in S. E. ¼ of S. W. ¼ of S. 4, T. 17, R. 3 W.

Coal	3 inches
Shale with coal streaks	3 inches
Coal	30 inches
Shale, soft	3 inches
Coal	5 inches

In S. E. ¼ of N. E. ¼ of S. 5, T. 17, R. 3 W.

Coal, about	5 inches
Shale	1¾ inches
Coal	31 inches

Reported section in drifts in N. W. ¼ of N. E. ¼ of S. 5, T. 17, R. 3 W.

Coal	6 to 12 inches
Shale	2 to 5 inches
Coal	18 to 36 inches

In reported bore-hole 1 mile south of Coalburg.

Coal	6 inches
Shale	2 inches
Coal	42 inches
Shale	8 inches
Coal	6 inches

At the *Brown Mine* in S. W. ¼ of N. E. ¼ of S. 4, T 17, R. 3 W.

Coal	7 inches
Shale	3 inches
Coal	24 inches
Shale	3 inches
Coal	5 inches

In the *Coalbury Drifts* in S. E. ¼ of S. 32, T. 16, R. 3 W.

Coal	6 to 8 inches
Shale, in places a *black band ore*	2 to 4 inches
Coal	22 to 36 inches
Rash, mining	1 to 6 inches
Coal	0 to 5 inches

In the N. E. ¼ of N. W. ¼ of S. 34, T. 16, R. 3 W.

Coal	8 inches
Shale	2 to 3 inches
Coal	36 inches

In the N. E. ¼ of S. W. ¼ of S. 27, T. 16, R. 3 W.

Coal	7 inches
Shale	3 to 4 inches
Coal	35 inches

In the N. E. ¼ of N. W. ¼ of S. 22, T. 16, R. 3 W.

Coal	5 to 6 inches
Shale	2 inches
Coal	34 inches

In the N. W. ¼ of N. E. ¼ of S. 21, T. 16, R. 3 W.

Coal	6 inches
Shale	1 to 2 inches
Coal	26 inches

In the N. W. ¼ of N. E. ¼ of S. 11, T. 16, R. 3 W.

Coal	11 to12 inches
Shale	1 to 2 inches
Coal	21 to 22 inches

In the N. E. ¼ of N. W. ¼ of S. 5, T. 16, R. 3 W.

Coal	9 inches
Shale	1 to 2 inches
Coal	30 inches

In the N. E. ¼ of S. E. ¼ of S. 11, T. 16, R. 4 W.

Coal	7 to 8 inches
Shale	1 to 2 inches
Coal	36 inches

At *Cardiff Old Drifts* in N. E. ¼ of S. E. ¼ of S. 15, T. 16, R. 4 W.

Coal	4 inches
Shale	2 to 3 inches
Coal	38 to 39 inches

At *Cardiff New Mine* near center of N. E. ¼ of S. 5, T. 16, R. 4 W.

Coal	2 to 6 inches
Shale	2 to 4 inches
Coal	39 to46 inches

At and in the *Brazil Mines* in S. W. ¼ of S. W. ¼ of S. 12, T. 16, R. 4 W.

Coal	3 to 10 inches
Shale	1 to 3 inches
Coal	33 to 46 inches

At the *Jett Drift* in N. W. ¼ of S. W. ¼ of S. 10, T. 16, R. 4 W.

Coal	5 inches
Shale	1½ to 2½ inches
Coal, about	36 inches

In the N. W. ¼ of N. W. ¼ of S. 10, T. 16, R. 4 W.

Coal	4 to 5 inches
Shale	3 to 4 inches
Coal	35 inches

In the S. E. ¼ of S. W. ¼ of S. 9, T. 16, R. 4 W.

Coal	6 inches
Shale	1 to 2 inches
Coal	30 inches
Shale	1 inch
Coal	2 inches

In the S. W. ¼ of S. E. ¼ of S. 8, T. 16, R. 4 W.

Coal	2 to 3 inches
Shale	1 to 2 inches
Coal	25 to 26 inches

In the N. E. ¼ of N. E. ¼ of S. 18, T. 16, R. 4 W.

Coal	2 inches
Shale	1 inch
Coal	1 to 2 inches
Shale	1 inch
Coal	29 inches

At *Old No. 3 Drifts, Blossburg,* in N. E. ¼ of S. E. ¼ of S. 22, T. 16, R. 4 W.

Coal	6 to 8 inches
Shale	2 to 3 inches
Coal	37 inches

At *New No. 3 Drifts, Blossburg,* in S. ½ of N. E. ¼ of S. 22, T. 16, R. 4 W.

Coal	8 inches
Shale	2 inches
Coal	38 inches

At *Nos. 1 and 2 Drifts, Blossburg,* near south-west corner of S. 21, T, 16, R. 4 W.

Coal, with 2 inch parting	39 to 48 inches

Reported section of coal in *Sloss Slope, Blossburg,* in S. W. ¼ of S. E. ¼ of S. 21, T. 16, R. 4 W.

Coal	6 inches
Shale	2 inches
Coal	33 to 40 inches

Reported section of coal in *Slope at No. 4, Blossburg, in* S. E. ¼ of S. 34, T. 16, R. 4 W.

Coal	6 inches
Shale	1 to 2 inches
Coal	24 to 32 inches

In reported bore-hole between Blossburg and Adamsville.

Coal with two partings	36 inches

Outcrop in S. E. ¼ of N. W. ¼ of S. 16, T. 16, R. 4 W.

Coal	5 inches
Shale	2 inches
Coal	35 inches

At the mouth of an old drift in the S. E. ¼ of N. E. ¼ of S. 30, T. 16, R. 4 W.

Coal	2 to 3 inches
Shale	1 inch
Coal	27 inches

In the S. E. ¼ of S. E. ¼ of S. 13, T. 16, R. 5 W.

Coal	3 inches
Shale	1 to 2 inches
Coal	23 to 24 inches

In the N. W. ¼ of S. W. ¼ of S. 16, T. 16, R. 4 W.

Coal	2 inches
Shale	½ inch
Coal	33 to 34 inches

In the N. W. ¼ of N. W. ¼ of S. 24, T. 16, R. 5 W.

Coal	4 inches
Shale	streak.
Coal	24 inches

In the N. W. ¼ of N. W. ¼ of S. 25, T. 16, R. 5 W.

Coal smut, with likely a thin parting 10 to 12 inches from top	33 to 34 inches

In the N. W. ¼ of N. W. ¼ of S. 25, T. 16, R. 5 W.

Coal	10 to 11 inches
Shale	½ inch
Coal	24 inches

In the N. E. ¼ of N. W. ¼ of S. 31, T. 16, R. 4 W.

Coal	6 inches
Shale	1 inch
Coal	29 inches

In Valley Creek in south-east corner of S. 35, T. 16, R. 5 W.

Coal	19 inches

In the N. E. ¼ of N. W. ¼ of S. 35, T. 16, R. 5 W.

Coal smut	39 inches

In the N. W. ¼ of N. W. ¼ of S. 34, T. 16, R. 5 W.

Coal smut	28 inches

In the S. E. ¼ of S. E. ¼ of S. 33, T. 16, R. 5 W

Coal smut	28 inches

In the S. E. ¼ of N. E. ¼ of S. 4, T. 17, R. 5 W.

Coal smut	28 inches

In the N. E. ¼ of N. W. ¼ of S. 8, T. 17, R. 5 W.

Coal smut	16 inches

This may be only the upper part of the seam.

In the N. E. ¼ of N. W ¼ of S. 20, T. 17, R. 5 W.

Coal smut	14 to 15 inches
Shale	1 inch
Coal smut	17 inches

In the N. E. ¼ of S. E. ¼ of S. 25, T. 17, R. 6 W.

Coal smut	3 inches

In the N. E. ¼ of N. E. ¼ of S. 2, T. 18, R. 6 W.

Coal smut	7 inches

In the N. E. ¼ of N. W. ¼ of S. 9, T. 18, R. 6 W.

Coal	10 inches
Shale	2 inches
Coal	4 inches
Shale	2 inches
Coal	2 inches

In Mud Creek in S. E. ¼ of N. W. ¼ of S. 8, T. 18, R. 6 W.

Coal	10 to 12 inches
Shale, black	1 to 4 inches
Coal	11 inches

In the S. E. ¼ of N. W. ¼ of S. 17, T. 18, R. 6 W.

Coal	4 inches
Shale	3 inches
Coal	11 inches

In the S. W. ¼ of S. W. ¼ of S. 4, T. 18, R. 6 W.

Coal	10 to 11 inches
Shale	2 inches
Coal	9 inches

In the N. E. ¼ of N. W. ¼ of S. 27, T. 17, R. 6 W.

Coal smut	6 inches

In the S. W. ¼ of N. W. ¼ of S. 11, T. 17, R. 6 W.

Coal smut	28 inches

In the S. E. ¼ of N. E. ¼ of S. 2, T. 17, R. 6 W.

Coal smut	36 inches

In the N. E. ¼ of N. W. ¼ of S. 2, T. 17, R. 6 W.

Coal smut	13 to 14 inches
Parting	¾ inch
Coal smut	15 to 16 inches

In the S. W. ¼ of S. W. ¼ of S. 26, T. 16, R. 6 W.

Coal smut	9 inches
Shale	½ to ¾ inch
Coal smut	25 inches

In the S. W. ¼ of N. E. ¼ of S. 14, T. 16, R. 6 W.

Coal	5 inches
Shale	½ inch
Coal	25 inches

In the N. W. ¼ of N. W. ¼ of S. 23, T. 16, R. 6 W.

Coal	2 inches
Shale, clayey	2 to 3 inches
Coal	25 inches

In the S. E. ¼ of N. E. ¼ of S. 15, T. 16, R. 6 W.

Coal	8 to 9 inches
Shale, black	2 to 3 inches
Coal	25 to 26 inches

In well in S. E. ¼ of S. W. ¼ of S. 9, T. 16, R. 6 W.

Coal, reported	38 inches

In the N. E. ¼ of S. E. ¼ of S. 16, T. 16, R. 6 W.

Coal	9 inches
Shale, black	2 to 3 inches
Coal, about	25 to 26 inches

In the N. W. ¼ of S. W. ¼ of S. 21, T. 16, R. 6 W.

Coal	9 inches
Shale, black	1 to 2 inches
Coal, about	24 inches

In the S. E. ¼ of N. E. ¼ of S. 30, T. 16, R. 6 W.

Coal	10 inches
Parting	0 to 1 inch
Coal	10 to 11 inches
Parting	¾ inch
Coal	12 inches

Fig.32

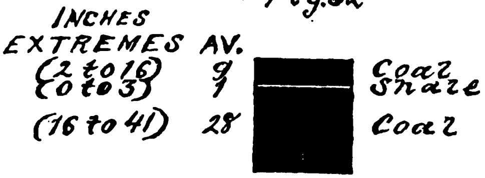

FIG. 32. *Average Section of the* Pratt Coal Seam *in the central portion of the Warrior Coal Field, along the Black Warrior River.*

At the *VanHoose Lower Drift* in S. E. ¼ of N. W. ¼ of S. 24, T. 16, R. 7. W.

Coal	13 to 16 inches
Shale, black, about	1 inch
Coal	2 to 4 inches
Shale, black	1 to 2 inches
Coal	14 to 16 inches
Shale, gray, about	2 inches
Coal	4 to 5 inches

At the *VanHoose Upper Drift* in S. E. ¼ of N. W. ¼ of S. 24, T. 16, R. 7 W.

Coal, about	10 inches
Mineral charcoal	1 to 2 inches
Coal, with irregular streaks of *mineral charcoal* about	14 inches
Mineral charcoal	¼ inch
Coal	16 to 17 inches
Shale	2 inches
Bony coal	2 to 3 inches

In the S. E. ¼ of N. E. ¼ of S. 24, T. 16, R. 7 W.

Coal, with, perhaps a thin parting	51 inches

In the N. E. ¼ of N. E. ¼ of S. 23, T. 16, R. 7 W.

Coal	2 inches
Parting	streak.
Coal	30 inches

In the S. W. ¼ of S. W. ¼ of S. 13, T. 16, R. 7 W.

Coal	12 inches
Shale	¾ inch
Coal	38 inches

In a couple of places in S. E. ¼ of N. W. ¼ of S. 14, T. 16, R. 7 W.

Coal	9 to 10 inches
Shale	1 to 2 inches
Coal	22 to 23 inches

In the N. E. ¼ of N. E. ¼ of S. 14, T. 16, R. 7 W.

Coal	9 inches
Shale, black	2 inches
Coal	24 inches

In the S. E. ¼ of S. W. ¼ of S. 13, T. 16, R. 7 W.

Coal	10 inches
Shale	1 to 2 inches
Coal	36 to 37 inches

In the S. W. ¼ of N. E. ¼ of S. 13, T. 16, R. 7 W.

Coal	16 inches
Parting	1 to 2 inches
Coal	16 inches

In the S. W. ¼ of N. E. ¼ of S. 18, T. 16, R. 6 W.

Coal	7 to 8 inches
Shale, black	1 to 2 inches
Coal	38 to 39 inches

In the S. W. ¼ of N. E. ¼ of S. 17, T. 16, R. 6 W.

Coal, over	5 inches
Shale	2 inches
Coal	40 to 41 inches

In the N. E. ¼ of N. W. ¼ of S. 1, T. 16, R .7 W.

Coal	11 to 12 inches
Shale, black	1 to 2 inches
Coal, with mineral charcoal streaks near top	21 to 22 inches

In the S. E. ¼ of S. W. ¼ of S. 19, T. 15, R. 6 W.

Coal	10 to 11 inches
Shale, black	½ inch
Coal	3 to 4 inches
Shale	½ inch
Coal, likely not full thickness	8 to 9 inches
Debris.	

In the S. E. ¼ of S. W. ¼ of S. 26, T. 15, R. 7 W.

Coal	7 to 8 inches
Shale	streak
Coal	19 to 20 inches

In the N. W. ¼ of S. W. ¼ of S. 35, T. 15, R. 7 W.

Coal, with thin parting near top, visible to depth of	46 inches

At Sulphur Spring in N. E. ¼ of S. E. ¼ of S. 22, T. 15, R. 7 W.

Coal, with mineral *charcoal streaks.* about	35 inches
Clay	22 to 26 inches
Coal, with *mineral charcoal* streak near top, about	20 inches

Some 200 yards to north-west of last outcropping.

Coal	10 to 11 inches
Shale	¾ inch
Coal	26 to 27 inches

There may be more coal some two feet under this.

At the *Double Falls* in N. W. ¼ of S. E. ¼ of S. 33, T. 15, R. 7 W.

Coal	9 inches
Shale	¼ inch
Coal	20 inches

In the S. E. ¼ of S. E. ¼ of S. 33, T. 15, R. 7 W.

Coal	17 inches
Shale	3 inches
Coal	12 to 13 inches
Shale	2 to 3 inches
Coal	8 to 9 inches

In the S. E. ¼ of S. E. ¼ of S. 4, T. 16, R. 7 W.

Coal	16 inches
Shale	1 to 2 inches
Coal	13 inches
Shale	½ inch
Coal	5 inches

In the S. W. ¼ of S. E. ¼ of S. 25, T. 15, R. 8 W.

Coal smut	25 inches

In the S. E. ¼ of N. E. ¼ of S. 36, T. 15, R. 8 W.

Coal smut	0 to 2 inches
Shale	18 to 30 inches
Coal smut	17 inches

In the N. E. ¼ of N. E. ¼ of S. 34, T. 15, R. 8 W.

Coal smut, about	13 inches
Shale	2 to 3 inches
Coal smut, nearly	14 inches

In the N. E. ¼ of S. W. ¼ of S. 27, T. 15, R. 8 W.

Coal smut	15 to 16 inches
Shale	2 to 3 inches
Coal smut	6 inches

In the N. E. ¼ of N. W. ¼ of S. 10, T. 16, R .8 W.

Coal smut	11 to 12 inches
Shale	4 inches
Coal, very shaly	2 inches
Shale, blush	60 to 72 inches
Coal and shale in streaks	14 inches

In southern part of N. E. ¼ of S. 33, T. 15, R. 8 W .

Coal smut	12 inches
Shale	3 inches
Coal smut	5 inches

In S. E. ¼ of N. W. ¼ of S. 4, T. 16, R. 8 W.

Coal	13 inches

In the S. W. ¼ of S. E. ¼ of S. 28, T. 15, R. 8 W.

Coal, reported	33 to 34 inches

At and in the Drift in the N. E. ¼ of S. W. ¼ of S. 28, T. 15, R. 8 W.

Coal	13 inches
Shale	¼ to 2 inches
Coal, with in places two thin partings near top, about	12 inches

In Old Drift on south-east side of Day's Gap in N. W. corner of S. 33, T. 15, R. 8 W.

Coal, reported	32 to 34 inches

In Old Drift on north-west side of Day's Gap in S. E. corner of S. 29, T. 15, R. 8 W.

Coal	8 to 12 inches
Shale	½ to 1 inch
Coal	1 to 3 inches
Shale	1 to 2 inches
Coal	15 to 16 inches
Shale, reported	7 feet
Coal, (Fire Clay Seam,) about	20 inches

At mouth of Third Old Drift on north-west side of Day's Gap from Cane Creek, in N. E. ¼ of N. E. ¼ of S. 32, T. 15, R. 8 W.

Coal	14 inches
Smutty streak	
Coal	1 to 2 inches
Smutty streak	
Coal	31 inches

In test pit on north-west side of Day's Gap.

Coal	20 inches
Shale	1 to 2 inches
Coal	23 inches.

In Drifts (near Oakman) in N. E. ¼ of N. E. ¼ of S. 29, T. 15, R. 8 W.

Coal	13 to 14 inches
Shale	3 to 4 inches
Coal, lower 5 to 7 inches *cannel coal*	20 inches
Shale, clayey	3 to 14 inches
Coal, (Fire Clay Seam)	14 inches
Shale, clayey, reported	20 to 48 inches
Coal, reported	2 inches

At the *Peacock Mine* in the N. W. ¼ of N. E. ¼ of S. 29, T. 15, R. 8 W.

Coal	13 inches
Shale	½ inch
Coal	1 inch
Shale	½ inch
Coal, lower 6 to 9 inches *cannel coal*	19 inches
Shale, clayey, reported	9 inches
Coal, (Fire Clay Seam,) reported	18 inches

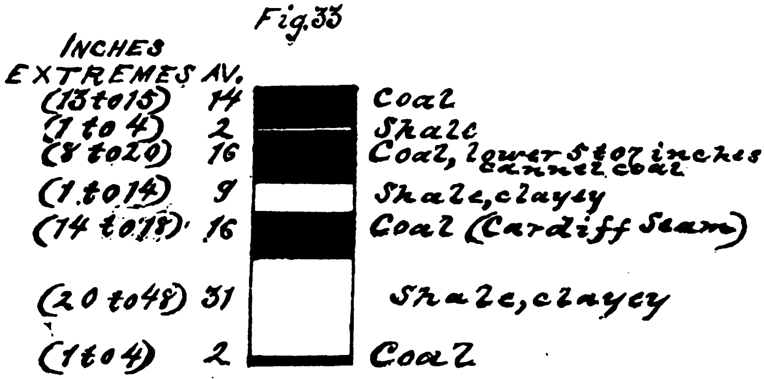
Fig.33
INCHES
EXTREMES AV.
(13to15) 14 Coal
(1 to 4) 2 Shale
(8 to20) 16 Coal, lower 5 to 7 inches cannel coal
(1 to14) 9 Shale, clayey
(14 to18) 16 Coal (Cardiff Seam)
(20 to48) 31 Shale, clayey
(1to4) 2 Coal

FIG. 33. *Average Section of the* Corona (Pratt and Fire Clay Seams united) *Coal Seam, at and near Coal Valley.*

In *Drifts at Old Coal Valley.*

Coal	13 to 14 inches
Shale	1 to 2 inches
Coal, the upper part a *semi-cannel coal* in places	8 to 17 inches
Shale, clayey	1 to 14 inches
Coal, (Fire Clay Seam)	15 to 16 inches
Shale, clayey	24 to 30 inches

In *Drift No. 10 (New Coal Valley)* in S. W. ¼ of N. E. ¼ of S. 31, T. 15. R. 8 W.

Coal, said to average *1¼ inches*	12 inches
Shale	2 inches
Coal, with bony streak near middle in places	26 inches

From the sections that have been given, it will be seen that the Pratt and Fire Clay coal seams are about 7 feet apart in Days Gap, from only 1 to 14 inches apart in Old Coal Valley, and together with only a bony streak between in New Coal Valley. To the west, they appear to come together about along a line drawn from Coal Valley to Patton. To the south of this line, they separate very rapidly as long as they can be seen or until they get 15 to 20 feet apart. The upper split (Pratt Seam) is about as in the following two outcrops:

Outcropping in N. E. ¼ of S. W. ¼ of S. 31, T. 15, R. 8 W.

Coal smut	12 inches
Shale	2 to 3 inches
Coal smut	5 inches

In the N. E. ¼ of S. W. ¼ of S. 25, T. 15, R. 9 W.

Coal smut, thickening	10 inches
Shale, about	3 inches
Coal smut, about	4 inches

The following two outcrops and bore-hole show the two splits or coal seams from 10 to 20 feet apart.

Outcrop in the N. E. ¼ of N. E. ¼ of S. 35, T. 15, R. 9 W.

Coal, upper split, (Pratt Seam.)	
Shale, sandstone, about	20 feet
Coal, under split, (Fire Clay Seam,) shaly in places	33 inches
Shale, clayey	4 to 5 inches
Coal	½ inch

In reported boring in S. 25, T. 15, R. 9 W.

Shale	
Coal (Pratt Seam)	23 inches
Shales, sandstones	17 feet 6 inches
Coal (Fire Clay Seam)	19 inches

Outcropping in the N. W. ¼ of N. W. ¼ of S. 35, T. 15, R. 9 W.

	Coal smut (Pratt Seam)	
	Shales, sandstones, about	10 feet
Fire Clay Seam	*Coal smut,* about	21 inches
	Shale, clayey	4 inches
	Coal smut	1 to 2 inches

At Patton and the mines and outcrops to the west, the two coal seams (Pratt and Fire Clay) are united into one coal seam.

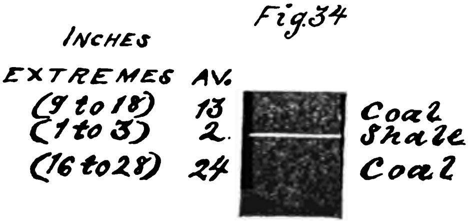

Fig. 34. *Average Section of the* Corona (Pratt and Fire Clay Seams united) Coal Seam *at and near Patton, Corona, etc.*

In *Drift No. 2, Patton,* in S. E. ¼ of N. W. ¼ of S. 26, T. 15, R. 9 W.

Coal	9 to 15 inches
Shale	1 to 3 inches
Coal	27 to 32 inches

Reported section of coal seam in *Deer Head Drifts* in N. W. ¼ of N. W. ¼ of S. 35, T. 15, R. 9 W.

Coal	18 inches
Shale	2 inches
Coal, said to average 28 inches	24 to 34 inches

Drift No. 1, Corona, in S. E. ¼ of S. W. ¼ of S. 27, T. 15, R. 9W.

Coal	4 inches
Shale	3 inches
Coal	24 inches

Reported section of Coal Seam in *Drift No. 3, Corona,* in N. W. ¼ of N. W. ¼ of S. 27, T. 15, R. 9 W.

Coal, about	14 inches
Shale	3 inches
Coal, about	21 inches

Reported section in the *Lockhart Mine* in S. W. ¼ of N. E. ¼ of S. 28, T. 15, R. 9 W.

Coal	15 inches
Shale	3 inches
Coal	20 to 24 inches

In *Smith Old Slope* in S. W. ¼ of N. W. ¼ of S. 28, T. 15, R. 9 W.

Coal	16 to 17 inches
Shale	3 inches
Coal	16 inches

In the S. W. ¼ of N. E. ¼ of S. 19, T. 15, R. 9 W.

Coal smut	5 to 6 inches

In the N. W. ¼ of N. W. ¼ of S. 14, T. 15, R. 9 W.

Coal	7 inches
Shale	2 inches
Coal	23 inches.
Shale, reported	12 inches
Coal, reported	18 inches

At the *Thrasher Coal Bed* in S. E. ¼ of S. E. ¼ of S. 13, T. 15, R. 9 W.

Coal	15 inches
Shale	2 inches
Coal	24 inches

Outcrop in the N. W. ¼ of S. W. ¼ of S. 6, T. 15, R. 8 W.

Coal smut	26 inches

In the N. E. ¼ of N. E. ¼ of S. 34, T. 14, R. 9 W.

Coal, shaly	6 inches
Shale, clayey	6 to 9 inches
Coal	18 inches

Outcrop in S. E. ¼ of S. E. ¼ of S. 20, T. 15, R. 8 W.

Coal	21 to 22 inches
Cannel coal, shaly	12 to 13 inches
Shale, clayey	60 to 72 inches
Coal smut	9 inches

In the N. E. ¼ of S. E. ¼ of S. 20, T. 15, R. 8 W.

Coal smut, thickening	6 to 8 inches
Cannel coal, very shaly and hard	13 inches
Shale, sandstone	8 to 9 feet
Coal smut	6 inches

In *Drift No. 1, Mountain Valley,* in N. W. ¼ of S. W. ¼ of S. 18, T. 15, R. 8 W.

Coal	13 to 14 inches
Shale, *coaly*	1 to 2 inches
Coal	27 inches.

In *Drift No. 2, Mountain Valley,* in S. E. ¼ of N. E. ¼ of S. 13, T. 15, R. 8 W.

Coal	12 inches
Shale	2 inches
Coal	24 inches

In the N. W. ¼ of N. E. ¼ of S. 8, T. 15, R. 6 W.

Coal, lower 15 to 16 inches very hard and bony with layers of shaly *cannel coal,* splits up into broad slabs	37 inches

In the N. W. ¼ of N. W. ¼ of S. 36, T. 14, R. 9 W.

Coal smut	36 inches

In the S. E. ¼ of S. E. ¼ of S. 26, T. 14, R. 9 W.

Coal smut	30 inches

In the N. E. ¼ of N. E. ¼ of S. 34, T. 14, R. 9 W.

Coal	22 inches
Shale, clayey	11 inches
Coal to water	2 inches
Coal felt under water	16 to 17 inches

In the N. E. ¼ of S. W. ¼ of S. 8, T. 14, R. 9 W.

Coal smut	34 inches

In the S. W. ¼ of N. W. ¼ of S. 3, T. 14, R. 10 W.

Coal, reported	36 inches

In the N. W. ¼ of N. E. ¼ of S. 9, T. 14, R. 10 W.

Coal, reported	48 inches

Inthe N. E. ¼ of S. E. ¼ of S. 23, T. 14, R. 11 W.

Coal smut	8 inches

In the N. W. ¼ of N. W. ¼ of S. 29, T. 14, R. 11 W.

Coal smut	11 inches

In the S. E. ¼ of S. E. ¼ of S. 19, T. 14, R. 11 W.

Coal smut	12 inches

In the S. W. ¼ of S. E. ¼ of S. 10, T. 15, R. 12 W.

Bituminous shale	12 inches

In the N. W. ¼ of S. W. ¼ and S. W. ¼ of S. W. ¼ of S. 14, and N. E. ¼ of S. W. ¼ of S. 15, T. 14, R. 10 W.

Coal	22 inches

In the S. E. ¼ of S. E. ¼ of S. 25, T. 14, R. 10 W.

Coal, shaly *cannel coal*	6 inches
Coal	7 inches

In the S. W. ¼ of N. W. ¼ of S. 29, T. 14, R. 10 W.

Coal	8 inches

In the N. E. ¼ of S. W. ¼ of S. 8, T. 15, R. 10 W.

Coal	7 inches

In the S. E. ¼ S. W. ¼ of S. 16, T. 15, R. 10 W.

Coal	10 inches

In reported bore-hole in S. 32, T. 15, R. 10 W.

Shales, sandstones	79 feet
Coal	2 inches
Shale	4 inches
Coal	12½ inches
Fire Clay	18 inches
Shaly Clay	48 inches
Coal	1 inch
Shale	2 inches
Coal	1½ inches
Shale	7 inches
Coal	17 inches

e
l
s
-
s

n
n
l.
n
0
y-
4

CHAPTER V.

THE COBB GROUP OF COALS.

This group has usually three seams of coal that are called in an scending order, the *Thomas* (*Frierson*), *Cobb Lower*, and *Cobb Upper*. ee Plates I and V and Sections 1, 2, and 3, on Map. The bottom eam, however, is wanting in places in the eastern part of the field, and the top one in places in the western part of the field. The bottom one is sometimes separated by more than 150 feet from the others.

The most south-west visible outcrop of this group is at the Gould old slope and drift near Clements, though the outcrops are covered up to the north-east of this between the creeks and branches to near Davis Creek. From this creek, they are visible to the north-east to the north-west of Adger, where they become engulfed in a fault for some 5 to 6 miles to the north-east. They extend to the north-east to within almost a mile of Coalburg, but they do not occupy much territory to the north-east of Village Creek, as they are high up in the hills. They occur along Rock Creek and down the river on the east side to below the mouth of Little Shoal Creek. They extend up the river on the east side to the Locust Fork and on the west side to near Lost Creek, running up Lost and Wolf creeks, and crossing the G. P. R'y near Alta. They extend over on the waters of North River to below New Lexington and on Sipsy River to below Davis Creek P. O., though between the waters of these rivers they are covered up by the superficial deposits.

The coal seams of this group are of only local importance from a commercial standpoint. The main seam is the bottom seam in the central and the middle one in the south-east part of the field. Each of the seams has an outcrop of from 350 to 400 miles in length and each of them is known to underlie from 1,100 to 1,200 square miles of territory in the counties of Jefferson, Walker, Fayette, and Tuscaloosa. Their coals together add up to from 3 to 4 feet in thickness, with an average of about 3 feet 6 inches for the whole length of outcrops.

THE THOMAS (FRIERSON) COAL SEAM.

This coal seam is thick enough to be of commercial value only in the central part of the field and perhaps in the extreme south-eastern part of the field. It is usually in two benches that are too far apart to be mined together, though in places these benches are within a few inches of each other. In the eastern part of the field, excepting perhaps the extreme south-eastern part, the seam is either very thin or wanting. In the central part of the field, along and near the Black Warrior River, the lower bench is of workable thickness in most of its outcrops. In the western part of the field, the seam is quite uniform though not thick enough for mining purposes except in a few outcrops. The seam has never been mined any except in a superficial way, unless the Gould old slope and drifts near Clements are on it. Its coal appears to be of fine quality.

OUTCROPS OF THE THOMAS (FRIERSON) COAL SEAM.

Reported section in the *Gould Old Slope and Drifts* near Clements, in the N. E. ¼ of S. E. ¼ of S. 31, T. 21, R. 7 W.

Coal, slaty	8 inches
Clay shale	8 feet
Coal	14 inches
Clay	¼ inch
Coal	12 inches
Clay	20 inches
Coal	10 inches

This coal may be of a different seam. Its outcrops to the north-east for a long ways are hid by superficial deposits.

A couple of bore-holes near the south-east edge of the field near Ensley showed merely one or more streaks of coal about where this seam ought to be.

Outcrop in S. W. ¼ of N. E. ¼ of S. 1, T. 17, R. 5 W.

Coal and shale in thin alternate seams	13 inches

This seam of coal is said to be in the wells in the S. W. ¼ of S. W. ¼ of S. 6, T. 17, R. 4 W.

Outcrop in the S. E. ¼ of S. W. ¼ of S. 7, T. 18, R. 6 W.

Coal smut	5 inches
Shales	6 to 7 feet
Coal smut	21 inches

In the N. W. ¼ of N. W. ¼ of S. 18, T. 18, R. 6 W.

Coal	9 inches
Shale	12 inches
Coal, reported	24 inches

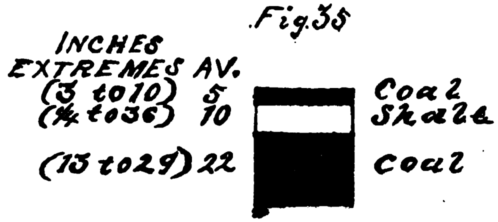

FIG. 35. *Average Section of the* Thomas (Frierson) Coal Seam *in the central part of the Warrior Coal Field, along and near the Black Warrior River.*

At *Frierson Old Mines* in S. E. ¼ of S. 36, T. 17, R. 7 W.

Coal	6 inches
Shales	30 inches
Coal	24 inches

In the N. W. ¼ of N. E. ¼ of S. 35, T. 17, R. 7 W.

Coal smut	5 to 6 inches
Shale	14 inches
Coal, reported	24 inches

In N. W. corner of S. 2, T. 18, R. 7 W.

Coal	5 to 7 inches
Shale	27 to 36 inches
Coal	28 to 29 inches

In *Coal Cave Hollow* in N. W. ¼ of S. E. ¼ of S. 30, T. 17, R. 6 W.

Coal	4 to 10 inches
Shale	½ to 5 inches
Coal	22 to 23 inches

In N. E. ¼ of S. W. ¼ of S. 20, T. 17, R. 6 W.

Coal smut	3 inches
Shale	2 inches
Coal smut	24 inches

In the S. W. ¼ of N. E. ¼ of S. 20, T. 17, R. 6 W.

Coal	3 to 4 inches
Shale	1 to 2 inches
Coal	20 to 24 inches

On west side of river on Short Creek in N. E. ¼ of N W. ¼ of S. 26, T. 17, R. 7 W.

Coal	21 to 22 inches

This last outcropping must be simply of the *lower bench,* as there is reported to be coal some 14 feet over it.

.*Thomas Coal Bed* in S. E. corner of S. 23, T. 17, R. 7 W.

Coal, reported	5 inches
Shale, reported	16 inches
Coal, reported	18 inches

Reported outcropping in S. W. ¼ of N. W. ¼ of S. 24, T. 17, R. 7 W.

Coal	4 to 5 inches
Shale	8 inches
Coal	13 to 14 inches

In S. E. ¼ of S. E. ¼ of S. 12, T. 17, R. 7 W.

Coal smut	16 inches
Shales, sandstones	12 feet
Coal	4 inches
Shale	½ to ¾ inch
Coal	16 inches

In N. E. ¼ of S. E. ¼ of S. 12, T. 17, R. 7 W.

Coal	4 inches
Shale, clayey	3 inches
Coal	18 inches

In N. E. ¼ and S. E. ¼ of S. E. ¼ of S. 34, T. 16, R. 7 W.

Coal smut	3 to 4 inches

This might possibly be only the *upper bench.*

Outcrops in S. E. ¼ of S. W. ¼ of S. 27, S. E. ¼ of N. W. ¼ of S. 34, and N. W. ¼ of S. E. ¼ of S. 28, T. 16, R. 7 W.

Coal smut, visible	6 to 12 inches

In the S. E. ¼ of S. 32, T. 16, R. 7 W.

Coal	2 to 3 inches
Shale	¾ inch
Coal	9 to 10 inches

Brown Coal Bed in Little Indian Creek in E. ½ of S. W. ¼ of S. 36, T. 16, R. 8 W.

Coal, under water, reported	2 to 3 feet

In S. W. ¼ of S. W. ¼ of S. 36, T. 16, R. 8 W.

Coal smut	13 inches
Shale	7 to 8 inches
Coal smut	8 to 9 inches

In N. E. ¼ of S. W. ¼ of S. 1, T. 17, R. 8 W.

Coal	6 inches
Sandstone, slabby, about	3 feet
Coal, under water, reported	18 inches

In the S. W. ¼ of S. E. ¼ of S. 21, T. 16, R. 8 W.

Coal	10 inches
Shale	¼ inch
Coal	9 inches

In S. W. ¼ of S. 11, T. 16, R. 8 W.

Coal smut	1 to 2 inches
Shale, clayey	6 to 7 inches
Coal smut	7 to 8 inches

In N. W. ¼ of S. W. ¼ of S. 10, T. 16, R. 9 W.

Coal	18 inches
Coal and shale, in streaks	12 inches
Shale	15 inches
Coal	1 inch

In the N. E. ¼ of S. W. ¼ of S. 31, T. 15, R. 9 W.

Coal	14 to 15 inches

In a couple of outcrops in S. W. ¼ of S. 25, T, 15, R. 10 W.

Coal	16 to 18 inches

Outcrop in S. E. ¼ of S. E. ¼ of S. 33, T. 15, R. 10 W.

Coal	16 to 17 inches

In N. E. ¼ of S. E. ¼ of S. 28, T. 15, R. 10 W.

Coal smut	8 to 11 inches

Near center of S. 22, T. 15, R. 10 W.

Coal, with thin rock parting in places	22 to 23 inches

THE COBB LOWER COAL SEAM.

This coal seam is variable and usually badly cut up by shale partings. It is not of workable thickness on the outcrops, unless in the extreme south-east part of the field. It has been surface dug some in the beds along the Black Warrior River, in ante-railroad times in Alabama, and floated down the river in boats during freshets.

OUTCROPS OF THE COBB LOWER COAL SEAM.

Reported outcropping in N. E. ¼ of S. E. ¼ of S. 31, T. 21, R. 7 W.

Coal	20 to 24 inches
Clay	4 inches
Coal	4 inches

This outcropping may be of a different seam, as it is impossible to trace it so far to the south-west because of the superficial covering.

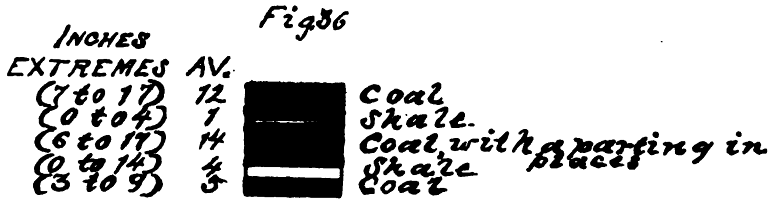

FIG. 36. *Average Section of the* Cobb Lower Coal Seam *in the south-west part of the Warrior Coal Field.*

Outcrop in S. W. ¼ of N. W. ¼ of S. 16, T. 21, R. 7 W.

Coal smut	12 to 13 inches
Shale	¾ inch
Coal	17 inches
Shale and *coal*	11 inches
Coal	9 inches

In S. W. ¼ of N. W. ¼ of S. 3, T. 21, R. 7 W.

Coal	17 inches
Shale	¼ inch
Coal	½ inch
Shale	¼ inch
Coal	11 inches
Shale	¼ inch
Coal	2 to 3 inches
Shale	1 inch
Coal	6 inches

In S. E. ¼ of S. E. ¼ of S. 12, T. 20, R. 7 W.

Coal	41 inches

In S. E. ¼ of S. W. ¼ of S. 18, T. 19, R. 5 W.

Coal smut	12 inches

In S. W. ¼ of N. W. ¼ of S. 10, T. 18, R. 4 W.

Coal smut	10 inches

In S. E. ¼ of S. W. ¼ of S. 21, T. 17 R. 4 W.

Coal smut	10 inches
Shale	2 to 3 inches
Coal smut	1 inch
Shale	¼ inch
Coal smut	4 inches
Shale	7 to 8 inches
Coal smut	2 inches
Shale	1 to 2 inches
Coal smut	1 inch
Shale	3 inches
Coal smut	4 inches

In S. E. ¼ of N. W. ¼ of S. 21, T. 17, R. 4 W.

Coal smut	11 to 12 inches
Shale	4 inches
Coal smut	4 inches
Shale	6 inches
Coal smut	2 inches
Shale	1 inch
Coal smut	2 inches
Shale	1 to 2 inches
Coal smut	3 inches

In N. E. ¼ of N. E. ¼ of S. 7, T. 17, R. 3 W.

Coal smut	7 inches
Shale	1 inch
Coal smut	½ inch
Shale	½ inch
Coal smut	1 inch
Shale	½ inch
Coal smut	½ inch
Shale	½ inch
Coal smut	1 inch
Shale	½ inch
Coal smut	2 inches
Shale	13 to 14 inches
Coal smut	3 to 4 inches

In N. W. ¼ of S. E. ¼ of S. 24, T. 17, R. 5 W.

Coal smut	6 to 12 inches

In S. W. ¼ of S. E. ¼ of S. 12, T. 18, R. 5 W.

Coal, shaly at bottom	20 inches

In S. E. ¼ of S. E. ¼ of S. 11, T. 18, R. 5 W.

Coal	24 inches

In N. W. ¼ of S. E. ¼ of S. 18, T. 18, R. 5 W.

Coal smut	15 to 16 inches

In the N. E. ¼ of N. E. ¼ of S. 23, T. 18, R. 6 W.

Shale and *coal*	1 inch
Coal smut	1 to 2 inches
Shale	1 to 3 inches
Coal smut	2 to 4 inches
Sandstone, shale	4 to 6 inches
Coal smut	½ inch
Shale	¼ inch
Coal smut	4 to 6 inches
Clay	3 to 6 inches
Coal, shaly	12 to 13 inches
Shale, debris, to water	3 feet

In S. W. ¼ of N. W. ¼ of S. 23, T. 18, R. 6 W.

Coal, shaly	1 inch
Shale	4 to 5 inches
Coal smut	3 inches
Shale, clayey	6 inches
Coal, with shale partings to water	11 inches
Coal under water	

In S. W. ¼ of N. E. ¼ of S. 21, T. 18, R. 6 W.

Coal, shaly	1 to 2 inches
Shale	6 to 8 inches
Coal	2 to 4 inches
Shale	6 to 8 inches
Coal	15 inches

In S. E. ¼ of S. W. ¼ of S. 29, T. 18, R. 6 W.

Coal	3 to 4 inches
Shale	11 to 14 inches
Coal	7 to 8 inches
Shale	3 to 12 inches
Coal	7 to 8 inches

In N. W. ¼ of S. E. ¼ of S. 3, T. 18, R. 7 W.

Ironstone	¾ inch
Shale	5 inches
Coal	2 inches
Shale	⅛ inch
Coal	2 inches
Shale	½ inch
Coal, about	12 inches.

In an other outcrop on Little Shoal Creek near the last.

Coal	20 to 21 inches

In S. W. ¼ of N. W. ¼ of S. 10, T. 18, R. 7 W.

Coal	18 inches

Reported section in S. W. ¼ of S. 23, T, 17, R. 7 W.

Coal	11 inches
Shale	5 to 6 inches
Coal	3 inches

Reported sections in N. W. ¼ of N. E. ¼ of S. 24, T. 17, R. 7 W.

Coal	2 to 4 inches
Shale	2 to 3 inches
Coal	18 to 19 inches

This coal seam from here for a long ways on the line of outcrops westward or until Fayette County is reached, is not over a few inches thick and in places it appears to be wanting.

In S. W. ¼ of S. W. ¼ of S. 35, T. 15, R. 9 W.

Coal, reported	18 to 20 inches

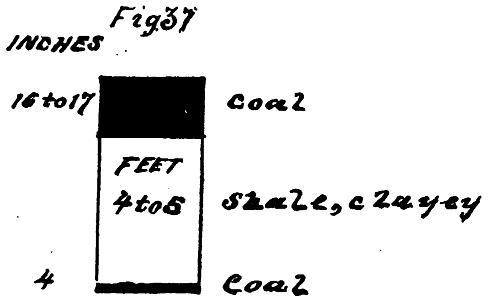

FIG. 37. *Outcrop of the* Cobb Lower Coal Seam *on the G. P. Ry., in the S. E. ¼ of S. W. ¼ of S. 31, T. 15, R. 9 W.*

Jackson Coal Bed in S. E. ¼ of S. 6, T. 16, R. 10 W.

Coal, reported ....20 inches

Ellis Coal Bed in S. E. corner of S. 36, T. 15, R. 11 W.

Coal, reported
Strata, reported ....5 to 6 feet
Coal, reported ....26 inches

Bailey Coal Bed in S. W. ¼ of S. E. ¼ of S. 30, T. 15, R. 10 W.

Coal, reported ....12 to 20 inches

In North River in south-west corner of S. 6, T. 16, R. 10 W.

Coal, reported ....18 to 20 inches

At *Baker's Old Factory* in N. W. ¼ of N. E. ¼ of S. 35, T. 15, R. 11 W.

Coal, reported ....18 inches

In S. W. ¼ of S. W. ¼ of S. 1, T. 16, R. 12 W.

Coal ....19 inches
The last two outcrops may not be of this seam.

In reported bore-hole in S. E. ¼ of S. 5, T. 21, R. 9 W., near mouth of North River.

Coal ....10 inches

In reported bore-hole in N. E. ¼ of N. E. ¼ of S. 26, T. 21, R. 10 W., near Tuscaloosa.

Coal ....27 inches

THE COBB UPPER COAL SEAM.

This coal seam is also very variable and in places is badly cut up by shale partings. In only two of its outcrops seen is it thick enough to be worked in a commercial way.

OUTCROPS OF COBB UPPER COAL SEAM.

In N. E. ¼ of S. E. ¼ of S. 31, T. 21, R. 7 W.

Coal, reported ....14 inches

In N. E. ¼ of N. E. ¼ of S. 4, T. 21, R. 7 W.

Coal, reported	12 inches

In S. W. ¼ of S. W. ¼ of S. 18, T. 19, R. 5 W.

Coal	24 inches

In N. E. ¼ of S. E. ¼ of S. 21, T. 17, R. 4 W.

Coal smut	4 inches
Shale	4 inches
Coal smut	5 inches

In S. E. ¼ of S. E. ¼ of S. 2, T. 17, R. 4 W.

Coal smut	10 inches
Shale, clayey	36 inches
Coal smut	½ inch
Shale	1 inch
Coal smut	8 inches
Shale, clayey	2 to 3 inches
Coal smut	½ inch
Shale	3 inches
Coal smut	½ inch

In N. W. ¼ of N. W. ¼ of S. 20, T. 17, R. 4 W.

Coal smut	10 inches
Shale	4 inches
Coal smut	5 to 6 inches

In N. E. ¼ of S. E. ¼ of S. 36, T. 17, R. 5 W.

Coal, shaly at bottom	11 inches

In N. W. ¼ of N. E. ¼ of S. 31, T. 17, R. 4 W.

Coal smut	9 inches

In N. E. ¼ of N. W. ¼ of S. 6, T. 18, R. 4 W.

Coal smut	12 inches

In N. W. ¼ of S. E. ¼ of S. 18, T. 18, R. 5 W.

Coal smut	2 inches
Shale	2 inches
Coal smut	5 to 6 inches

In S. W. ¼ of N. E. ¼ of S. 23, T. 18, R. 6 W.

Coal smut	3 to 4 inches
Shale	5 inches
Coal smut	21 inches

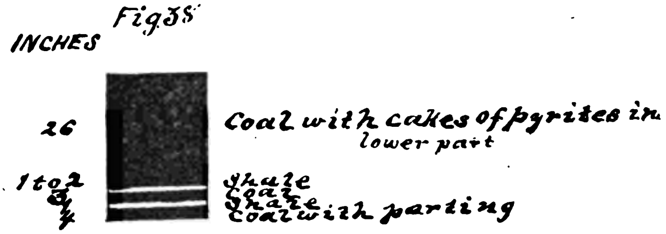

FIG. 38. *Outcrop of the* Cobb Upper Coal Seam *in the S. E. ¼ of S. E. ¼ of S. 1, T. 18, R. 7 W.*

Around *Old Wilmington P. O.* in N. E. ¼ of N. E. ¼ of S. 27, T. 17, R. 7 W.

Coal	8 to 12 inches

Farther west the outcrops of this coal seam are sometimes nothing wore than clay and often only one or more smutty streaks in clay.

In N. W. ¼ of S. E. ¼ of S. 36, T. 16, R. 8 W.

Coal smut	4 to 5 inches
Clay	2 to 4 inches
Coal smut	4 to 5 inches
Shale, clayey	6 to 8 feet
Coal smut	5 to 6 inches

In N. W. ¼ of S. 14, T. 17, R. 8 W.

Coal	16 inches
Shale	1 to 2 inches
Coal	2 inches

Some 300 yards south of last outcroppng.

Coal smut	10 inches
Shale	2 to 3 inches
Coal smut	5 to 6 inches

In N. E. ¼ of N. E. ¼ of S. 18, T. 17, R. 8 W.

Shale with *coal* streaks	3 to 4 feet

In N. W. ¼ of S. E. ¼ of S. 27, T. 16, R. 8 W.

Coal smut	9 to 10 inches

In S. W. ¼ of S. E. ¼ of S. 34, T. 15, R. 9 W.

Coal, reported	27 to 30 inches

Several outcrops near Holly Springs (X Roads) in N. W. ¼ of S. 9, T. 16, R. 10 W.

Coal, with partings	8 inches

In N. E. ¼ of N. W. ¼ of S. 20, T. 16, R. 10 W.

Coal smut	4 to 5 inches
Clay	12 to 18 inches
Coal smut	4 to 5 inches

In N. W. ¼ of N. W. ¼ of S. 7, T. 16, R. 10 W.

Coal smut	11 inches

In S. E. ¼ of N. E. ¼ of S. 34, T. 15, R. 11 W.

Coal	10 inches

In S. W. ¼ of S. W.¼ of S. 2, T. 16, R. 11 W

Coal	13 inches

In N. E. ¼ of S. E. ¼ of S. 28, T. 15, R. 11 W.

Coal	12 inches

In N. E. ¼ of N. E. ¼ of S. 21, T. 15, R. 11 W.

Coal	7 inches

In S. E. ¼ of S. E. ¼ of S. 35, T. 15, R. 12 W.

Coal	8 inches

In reported bore-hole in S. E. ¼ of S. 5, T. 21, R. 9 W., near mouth of North River.

Coal	17 inches
Bituminous shale	18 inches

In reported bore-hole in N. E. ¼ of N. E. ¼ of S. 26, T. 21, R. 10 W., near Tuscaloosa.

Coal	4 inches

Thi
[illegible]
and
are s
get
T
a co
ther
In
as
[illegible]

F
th
P
[illegible]

CHAPTER VI.

THE GWIN GROUP OF COALS

This group has only two coals seams. The top one is called the *Gwin Seam* and the other the *Thompson Mill Seam*. See Plates I and VI, and Sections 1, 2, and 3, of Map. Both seams, however, are split up in places until the upper and lower portions of each get to be 25 and more feet apart.

The coal seams of this group are of only local importance from a commercial standpoint. They are both very variable, and one of them is the main seam in one place and the other in an other place. In a general way, however, the top seam is the main seam to the east of the Black Warrior River and the other to the west of that river.

The outcrops of this group have been traced from the Middle Fork of Hurricane to the north-east to Valley Creek and around the head waters of Mud, Wolf, and Big Shoal creeks; along the Black Warrior River, on each side, from above Big Shoal Creek to below the mouth of Daniel Creek; up Yellow Creek to near Boley Springs; around Oregonia, and along North River, on both sides, from above the mouth of Cripple Creek to near its mouth. See Map for its lines of outcrops. The outcrops of each of its coal seams, in all their ramifications, must be some 700 miles long. Each of these seams are known to underlie some 600 square miles of territory in the counties of Jefferson, Fayette, and Tuscaloosa. Their coals together are from about 2 feet 6 inches to 5 feet thick, with an everage thicknees for all of the outcrops of about 3 feet.

THE THOMPSON MILL COAL SEAM.

This coal seam is very variable and badly cut up by shale partings. The partings, however, are thin enough in a few places to permit of the coal being commercially worked. It is sometimes split up until its upper and lower portions are as much as 75 feet apart. It has never been worked except in a small and superficial way.

OUTCROPS OF THE THOMPSON MILL COAL SEAM.

This coal seam has not been seen to the south-west of Milldale, and so it must be very thin, if not wanting entirely, in the extreme south-east part of the field.

In S. E. ¼ of S. E. ¼ of S. 14, T. 20, R. 7 W.

Coal smut	3 inches

In N. W. ¼ of N. W. of S. 13, T. 20, R. 7 W.

Coal	12 inches
Shale	1 inch
Coal	3 inches

In S. W. ¼ of S. W. ¼ of S. 12, T. 20, R. 7 W.

Coal	13 inches
Shale	1 to 2 inches
Coal	3 inches

In S. W. ¼ of S. W. ¼ of S. 2, T. 20, R. 7 W.

Coal	12 inches

In S. W. ¼ of S. W. ¼ of S. 3, T. 20, R. 7 W.

Coal smut	8 inches

In N. E. ¼ of S. E. ¼ of S. 35, T. 19, R. 7 W.

Coal smut	9 inches

In S. W. ¼ of S. W. ¼ of S. 5, T. 20, R. 6 W.

Coal	14 inches

In N. W. ¼ of N. W. ¼ of S. 5, T. 20, R. 6 W.

Coal	20 inches

In S. E. ¼ of S. W. ¼ of S. 32, T. 19, R. 6 W.

Coal	½ inch
Shale	1 inch
Coal	2 inches
Shale	½ inch
Coal	32 inches
Shale	5 inches
Coal	7 inches

In S. W. ¼ of S. W. ¼ of S. 30, T. 18, R. 4 W.

Coal	18 inches

In N. E. ¼ of S. W. ¼ of S. 17, T. 18, R. 5 W.

Coal	14 inches
Shale	1 inch
Coal	12 inches

In S. W. ¼ of S. W. ¼ of S. 29, T. 18, R. 5 W.

Coal smut	6 inches

In S. E. ¼ of S. E. ¼ of S. 4, T. 19, R. 6 W.

Coal smut	4 inches

In N. W. ¼ of S. E. ¼ of S. 14, T. 18, R. 7 W.

Coal	14 inches
Shale	½ inch
Coal	2 inches

In N. E. ¼ of S. E. ¼ of S. 9, T. 18, R. 7 W.

Coal smut	6 inches

In N. W. ¼ of N. W. ¼ of S. 16, T. 18, R. 7 W.

Coal smut	6 inches

In N. W. ¼ of N. E. ¼ of S. 25, T. 18, R. 8 W.

Coal	2 inches
Shale	3 inches
Coal	11 inches
Shale	2 inches
Coal	1 inch
Shale	3 inches
Coal	3 inches

In S. W. ¼ of S. E. ¼ of S. 26, T. 18, R. 8 W.

Coal	13 inches
Shale	1 to 2 inches
Coal	3 inches
Shale, with *coal* streaks	48 to 50 inches
Coal	0 to 3 inches
Shale	0 to ½ inch
Coal	0 to ½ inch
Shale	0 to ½ inch
Coal	0 to ½ inch
Shale	0 to ¾ inch
Coal	11 to 15 inches

In S. W. ¼ of S. E. ¼ of S. 26, T. 18, R. 8 W.

Coal	2 inches
Shale	3 inches
Coal	11 inches
Shale	2 inches
Coal	2 inches
Shale	3 inches
Coal	4 inches

In S. E. ¼ of S. W. ¼ of S. 25, T. 18, R. 8 W.

Coal	13 inches
Shale	48 inches
Coal	3 inches
Shale	2 inches
Coal	12 inches

In N. W. ¼ of S. E. ¼ of S. 13, T. 18, R. 8 W.

Coal	4 inches
Shale	2 inches
Coal	3 inches

In S. W. ¼ of N. E. ¼ of S. 1, T. 19, R. 8 W.

Coal	11 inches
Shale	3 inches
Coal	1 to 2 inches
Shale	3 inches
Coal	2 inches

In S. E. ¼ of S. E. ¼ of S. 2, T. 19, R. 8 W.

Coal	8 inches

In N. E. ¼ of S. 25, T. 19, R. 7 W.

Debris	
Coal smut, visible	14 inches
Clay, debris, about	60 inches
Coal smut, visible	12 inches
Debris	48 inches
Coal smut, visible	4 inches

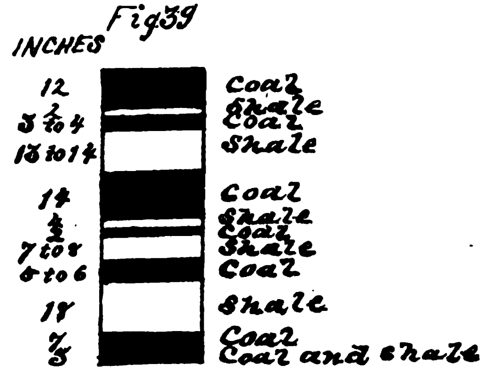

FIG. 39. *Outcrop of the* Thompson Mill Coal Seam *at the Thompson Mill on Davis Creek, in the S. W. ¼ of S. E. ¼ of S. 17, T. 19, R. 7 W. (The 14 inches of coal has in it three thin shale partings.)*

In S. E. ¼ of N. W. ¼ of S. 10, T. 19, R. 8 W.

Coal	3 inches
Shale, bluish	⅛ inch
Coal	1 inch
Shale, black	2 inches
Coal	1 inch
Debris, may hide *coal*.	

In N. E. ¼ of N. E. ¼ of S. 14, T. 18, R. 9 W.

Coal	6 inches
Shale	6 inches
Coal	5 inches

In S. W. ¼ of N. E. ¼ of S. 14, T. 18, R. 9 W.

Coal	7 inches
Shale	6 inches
Coal	6 inches

In S. W. ¼ of S. E. ¼ of S. 10, T. 18, R. 8 W.

Coal	8 inches
Shale	5 to 6 inches
Coal	3 to 4 inches

In N. E. ¼ of N. E. ¼ of S. 34, T. 17, R. 8 W.

Coal	8 inches
Shale	4 inches
Coal	8 inches
Shale	15 inches
Coal	10 inches

In N. W. ¼ of S. E. ¼ and N. E. ¼ of S. W. ¼ of S. 22, T. 17, R. 8 W.

Coal	4 to 8 inches
Shale	1 to 5 inches
Coal	2 to 7 inches
Shale	⅛ to 3 inches
Coal	2 to 9 inches
Clay	4 to 6 inches
Coal	6 to 9 inches

In S. W. ¼ of N. E. ¼ of S. 13, T. 17, R. 8 W.

Coal	20 inches
Shale	24 inches
Coal	1 inch
Shale	1 to 2 inches
Coal	6 inches
Shale	1 inch
Coal	5 inches
Shale	5 inches
Coal	5 inches
Shale	1 inch
Coal	9 inches
Shale	½ inch
Coal	½ inch

The last outcropping in an other place had the following section.

Coal	22 to 23 inches
Shale	1 inch
Coal	1 inch
Shale	6 to 7 inches
Coal	1 inch
Shale	17 inches
Coal	1 inch
Shale	2 inches
Coal	¾ inch
Shale	¼ inch
Coal	4 to 5 inches
Shale	1 to 2 inches
Coal	6 inches
Shale	4 to 5 inches
Coal	5 inches
Shale	2 inches
Coal	9 to 10 inches

In S. W. ¼ of N. E. ¼ of S. 20, T. 16, R. 9 W.

Coal	12 inches

In S. E. ¼ of S. W. ¼ of S. 17, T. 16, R. 9 W.

Coal	13 inches

In S. E. ¼ of S. W. ¼ of S. 18, T. 16, R. 9 W.

Coal	12 inches

In S. W. ¼ of N. W. ¼ of S. 19, T. 16, R. 9 W.

Coal	16 inches

In N. W. ¼ of S. E. ¼ of S. 36, T. 16, R. 10 W.

Coal	1 inch
Clay	1 inch
Coal	½ inch
Clay	4 to 5 inches
Coal	12 inches
Clay; under water	4 inches
Coal, under water	2 inches

In N. E. ¼ of S. W. ¼ of S. 5, T. 17, R. 9 W.

Coal, with debris cover	10 to 11 inches

In well in S. W. ¼ of N. W. ¼ of S. 3, T. 17, R. 9 W.

Coal, reported	12 inches

In S. E. ¼ of S. E. ¼ of S. 30, T. 17, R. 9 W.

Coal	13 to 14 inches
Shale	2 to 3 inches
Coal	2 to 3 inches

This is believed to be the upper bench; the under bench some 20 feet lower, is reported to be 12 inches thick in well in N. W. ¼ of N. E. ¼ and in an outcropping in N. E. ¼ of N. E.¼ both of S. 31, T. 17, R. 9 W.

In N. W. ¼ of S. E. ¼ of S. 25, T. 17, R. 10 W.

Coal	13 inches

This is also probably the upper bech, as there is reported to be more coal some 20 feet under it.

In S. E. ¼ of N. W. ¼ of S. 5, T, 18, R. 9 W.

Coal	4 inches
Shale	2 inches
Coal	1 inch
Shale	11 inches
Coal	10 inches

The last outcropping in an other place was thus:

Coal	6 inches
Shale	9 to 10 inches
Coal	14 inches

In N. E. ¼ of N. E. of S. 8, T. 18, R. 9 W.

Coal and shale	1 inch
Shale	2 inches
Coal	½ inch
Shale	2 to 3 inches
Coal and shale	2 inches
Shale	2 inches
Coal	1 to 2 inches
Shale	1 inch
Coal	2 to 3 inches
Shale	1 inch
Coal	2 inches
Shale	2 inches
Coal	2 inches
Shale	2 inches
Coal	4 inches

In well in N. W. ¼ of N. W. ¼ of S. 9, T. 18, R. 9 W.

Coal, reported	15 to 16 inches

In S. W. ¼ of S. E. ¼ of S. 8, T. 18, R. 9 W.

Coal smut	8 inches

Fig. 40

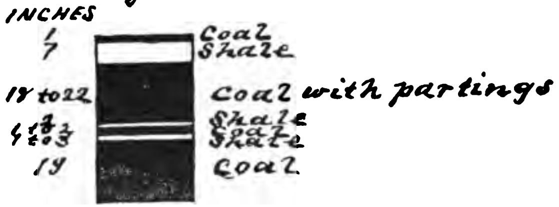

FIG. 40. *Section of the* Thompson Mill Coal Seam *in the Utley Mine in the S. W. ¼ of S. W. ¼ of S. 11, T. 18, R. 10 W*

In S. E. ¼ of S. E. ¼ of S. 10, T. 18, R. 10 W.

Coal	4 to 5 inches
Shale, clayey	1 inch
Coal	6 inches

In S. W. ¼ of S. W. ¼ of S. 13, T. 18, R. 10 W.

Coal	15 inches

In N. E. ¼ of N. E. ¼ of S. 3, T. 18, R. 8 W.

Coal smut	12 inches

In S. W. ¼ of N. E. ¼ of S. 22, T. 17, R. 10 W.

Coal	14 inches

In S. W. ¼ of N. W. ¼ of S. 9, T. 18, R. 10 W.

Coal	14 inches

In N. E. ¼ of N. E. ¼ of S. 16, T. 18, R. 10 W.

Coal	14 inches

In N. W. ¼ of N. W. ¼ of S. 21, T. 18, R. 10 W.

Coal	15 inches

In S. E. ¼ of N. W. ¼ of S. 21, T. 18, R. 10 W.

Coal	15 inches

Reported outcropping on Dry Creek in S. 17, T. 18, R. 9 W.

Coal	22 inches

In S. W. ¼ of S. W. ¼ of S. 30, T. 18, R. 9 W.

Coal with partings, reported	26 inches

In N. W. ¼ of N. E. ¼ of S. 31, T. 18, R. 9 W.

Coal smut	1 inch
Shale	1 inch
Coal smut	6 inches

In S. E. ¼ of S. W. ¼ of S. 28, T. 18, R. 9 W.

Coal	10 to 11 inches
Shale	1 to 2 inches
Coal	1 to 2 inches

The bottom bench.

In N. E. ¼ of S. 23, T. 18, R. 9 W.

Coal	13 to 14 inches

This is the lower bench; the upper bench, some 25 feet higher, is here about 6 inches thick.

At *Hagler's Mill* in N. W. ¼ of S. E. ¼ of S. 20, T. 19, R. 10 W.

Coal	1 to 2 inces
Shale	½ to 2 inches
Coal	¼ to ½ inch
Shale	¾ to 2 inches
Coal	¼ to 1 inch
Shale	⅛ to 1 inch
Coal	¾ to 4 inches

(OVER)

Shale	¼ to 2 inches
Coal	1 to 3 inches
Shale	½ to 18 inches
Coal	1 to 11 inches
Shale	¼ to ¾ inches
Coal	1 to 12 inches
Shale	¼ inch
Coal	2 to 3 inches

This outcropping must be of the lower bench, the upper bench being here about 35 feet higher and from 6 to 8 inches thick.

In S. E. ¼ of N. E. ¼ of S. 20, T. 20, R. 8 W.

Coal smut	8 inches

In reported bore-hole ½ mile from Warrior River in S. 30, T. 20, R. 8 W.

Coal	12 inches
Shale	30 feet
Coal	12 inches

In reported bore-hole on Bluff Creek in S. 4, T. 20, R. 8 W.

Coal	8 inches
Shale	10 feet
Coal	6 inches

In S. W. ¼ of N. W. ¼ of S. 16, T. 20, R. 8 W.

Coal	12 inches

This is doubtless only the upper part of the seam.

In S. E. ¼ of S. E. ¼ of S. 6, T. 20, R. 8 W.

Coal	10 inches
Shale	2 inches
Coal	½ inch
Shale	½ inch
Coal	2 inches

In N. E. corner of S. 6, T. 20, R. 8 W.

Coal	1 to 2 inches
Shale	¾ inch
Coal	6 inches

Reported outcrop on level with low water in Black Warrior River in S.'s 18 and 19, T. 19, R. 8 W.

Coal with two thin partings	25 inches

In N. E. ¼ of S. 10. T. 19, R. 8 W.

Coal	10 inches
Shale	⅛ inch
Coal	2 inches

In an other place some 40 to 50 steps down the branch, this same coal or an under bench to it measures 16 inches in thickness without any partings.

There are other outcrops of this coal seam along and near the Back Warrior River in T.'s 19 and 20, R. 8 W., but so far as known, they are thin. Some, at least, of them and of the outcrops mentioned are of only parts of this coal seam which is split up until in places its upper and lower portions are 25 to 30 feet apart.

In reported bore-hole in S. E. ¼ of S. 5, T. 21, R. 9 W.

Coal and shale	1 foot 11 inches
Shales, sandstones	38 feet 7 inces
Coal	6 inches
Shale	7 inches
Coal	5 inches
Shale	7 inches
Coal	5 inches
Shale	9 feet 0 inches
Coal and shale	9 inces

In reported bore-hole in N. E. ¼ of N. E. ¼ of S. 26, T. 21, R. 10 W.

Coal	4 inches

THE GWIN COAL SEAM.

This coal seam, as a whole, is best to the east of the Black Warrior River, though in the extreme south-east part of the field, to the south-west of Milldale, the outcrops are less than 12 inches thick. It is an especially fine seam of coal, very similar to the Pratt Seam in appearance, on the waters of Valley, Mud, Wolf, and Big Shoal creeks. To the west of the Warrior River, it is not only thinner but is also much worse cut up into thin seams and streaks by shale partings. It is also in many places in two benches that get to be 4 to 5 feet apart, and in its most south-western outcrops it is split up into from 2 to 4 different coal seams through some 60 feet of strata. It has never been worked.

OUTCROPS OF THE GWIN COAL SEAM.

In S. E. ¼ of N. W. ¼ of S. 9, T. 21, R. 7 W.

Coal	18 inches

In N. W. ¼ of N. E. ¼ of S. 8, T. 21, R. 7 W.

Coal	12 inches

All other outcrops of this coal seam that have been seen along the south-east edge of the field to the south-west of Davis Creek are less than 12 inches thick.

In N. W. ¼ of S. E. ¼ of S. 22, T. 19, R. 7 W.

Coal smut	12 inches

In N. E. ¼ of S. W. ¼ of S. 25, T. 19, R. 7 W.

Coal	14 inches
Shale, clayey, about	4 feet
Coal	3 inches
Shale and *coal*	4 to 5 inches
Shale, clayey	18 inches
Coal, shale	1 to 2 inces

In N. W. ¼ of N. W. ¼ of S. 31, T. 19, R. 7 W.

Coal smut	30 inches
Clay, debris, about	48 inches
Coal smut, visible	14 inches

In S. W. ¼ of N. E. ¼ of S. 5, T. 20, R. 6 W.

Coal	18 inches

In S. W. ¼ of S. W. ¼ of S. 2, T. 20, R. 7 W.

Coal smut	15 inches

In S. W. ¼ of S. W. ¼ of S. 33, T. 19, R. 6 W.

Coal	14 inches

In N. W. ¼ of N. W. ¼ of S. 34, T. 19, R. 6 W.

Coal	15 inches
Shale	2 inches
Coal	3 inches

In N. W. ¼ of N. E. ¼ of S. 26, T. 19, R. 6 W.

Coal	21 inches
Shale	1 inch
Coal	6 inches

In S. W. ¼ of N. W. ¼ of S. 24, T. 19, R. 6 W.

Coal	20 inches
Shale	1 inch
Coal	6 inches

In S. W. ¼ of S. W. ¼ of S. 18, T. 19, R. 5 W.

Coal	30 inches
Shale	1 inch
Coal	2 inches

In N. W. ¼ of N. E. ¼ of S. 18, T. 19, R. 5 W.

Coal	24 inches
Shale	1 inch
Coal	3 inches

In N. E. ¼ of S. W. ¼ of S. 8, T. 19, R. 5 W.

Coal	12 inches
Shale	1 inch
Coal	5 inches

In S. E. ¼ of S. E. ¼ of S. 32, T, 18, R. 5 W.

Coal	24 inches
Shale	1 inch
Coal	6 inches
Shale	6 inches
Coal	2 inches

In S. E. ¼ of S. E. ¼ of S. 32, T, 18, R. 5 W.

Coal	12 inches
Shale	2 inches
Coal	3 inches

In N. E. ¼ of N. E. ¼ of S. 31, T. 18, R. 5 W.

Coal smut and clay	30 inches

In N. E. ¼ of N. W. ¼ of S. 31, T. 18, R. 5 W.

Coal	24 inches
Shale	1 inch
Coal	10 inches
Shale	12 inches
Coal	11 inches

In N. W. ¼ of S. W. ¼ of S. 26, T. 18, R. 6 W.

Coal	26 inches
Shale	1 inch
Coal	4 inches
Shale	1 to 2 inches
Coal	8 inches
Shale	1 to 2 inches
Coal	5 inches
Shale	5 inches
Coal	5 inches
Shale	1 inch
Coal	5 inches

In N. W. ¼ of S. E. ¼ of S. 28, T. 18, R. 6 W.

Coal	24 inches
Shale	1 inch
Coal	12 inches

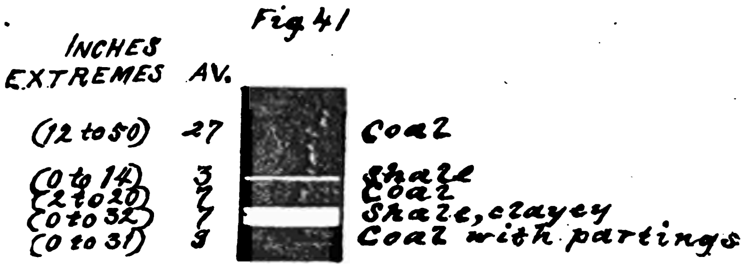

FIG. 41. *Average Section of the* Gwin Coal Seam *in its outcrops on the waters of Valley, Mud, Wolf and Big Shoal creeks.*

In S. W. ¼ of S. E. ¼ of S. 27, T. 18, R. 6 W.

Coal	24 inches
Shale	1 inch
Coal	8 inches
Shale	4 inches
Coal	12 inches

In N. E. ¼ of S. E. ¼ of S. 28, T. 18, R. 6 W.

Coal	30 inches
Shale	4 inches
Coal	20 inches

In S. W. ¼ of S. W. ¼ of S. 28, T. 18, R. 6 W.

Coal	42 inches

In N. E. ¼ of N. W. ¼ of S. 34, T. 18, R. 6 W.

Coal	48 inches

In S. E. ¼ of S. E. ¼ of S. 34, T. 18, R. 6 W.

Coal	30 inches
Shale	6 inches
Coal	6 inches

In S. E. ¼ of N. W. ¼ of S. 3, T. 19, R. 6 W.

Coal	32 inches
Shale	2 inches
Coal	8 inches
Shale	2 inches
Coal	2 inches

In S. W. ¼ of S. E. ¼ of S. 3, T. 19, R. 6 W.

Coal	51 inches

In N. E. ¼ of S. W. ¼ of S. 9, T. 19, R. 6 W.

Coal	36 to 47 inches
Shale	9 to 14 inches
Coal	9 to 12 inches

In N. E. ¼ of S. E. ¼ of S. 9, T. 19, R. 6 W.

Coal	36 to 37 inches
Shale	10 inches
Coal	8 to 9 inches

In S. E. ¼ of S. W. ¼ of S. 9, T. 19, R. 6 W.

Coal	58 inches

In S. W. ¼ of S. E. ¼ of S. 15, T. 19, R. 6 W.

Coal	30 inches
Shale	1 to 2 inches
Coal	4 to 5 inches
Shale	32 inches
Coal	½ inch
Shale	¼ inch
Coal	3 to 4 inches
Shale	¾ inch
Coal	6 inches

In N. E. ¼ of S. E. ¼ of S. 16, T. 19, R. 6 W.

Coal	46 inches

In N. W. ¼ of N. E. ¼ of S. 17, T. 19, R. 6 W.

Coal	32 inches
Shale	2 to 3 inches
Coal	8 inches

In S. W. ¼ of S. W. ¼ of S. 8, T. 19, R. 6 W.

Coal	33 inches
Clay	2 inches
Coal	10 inches

In S. E. ¼ of S. E. ¼ of S. 32, T. 18, R. 6 W.

Coal	38 inches

More coal is believed to be under this.

In S. W. ¼ of N. E. ¼ of S. 32, T. 18, R. 6 W.

Coal	34 to 35 inches
Shale	5 to 6 inches
Coal	5 to 6 inches

In S. W. ¼ of S. W. ¼ of S. 31, T. 18, R. 6 W.

Coal	26 inches
Shale	1 inch
Coal	7 inches

In S. W. ¼ of S. W. ¼ of S. 25, T. 18, R. 7 W.

Coal	17 inches
Shale	1 inch
Coal	½ inch
Shale	2 inches
Coal	2 inches

In S. W. ¼ of S. W. ¼ of S. 26, T. 18, R. 7 W.

Coal	26 inches
Shale	3 inches
Coal	2 to 3 inches

In N. W. ¼ of N. E. ¼ of S. 35, T. 18, R. 7 W.

Coal	0 to ¾ inch
Shale	0 to ¼ inch
Coal	0 to 2 inches
Mother of coal	⅓ to 1 inch
Coal	20 to 31 inches
Shale	½ to 4 inches
Coal, shaly	½ to 8 inches
Shale	½ to 5 inches
Coal	¾ to 2 inches
Shale	⅓ to 3 inches
Coal	¾ to 1 inch
Shale	0 to ½ inch
Coal	0 to ½ inch

In N. E. ¼ of S. W. ¼ of S. 35, T. 18, R. 7 W.

Coal	9 to 10 inches
Shale	½ inch
Coal	16 to 17 inches
Shale	6 inches
Coal	4 inches

In N. W. ¼ of S. E. ¼ of S. 35, T. 18, R. 7 W.

Coal	14 to 15 inches
Shale	1 inch
Coal	7 to 8 inches
Shale	6 to 7 inches
Coal	3 to 4 inches

In S. W. ¼ of S.. W. ¼ of S. 36, T. 18, R. 7 W.

Coal	2 inches
Shale	½ inch
Coal	24 to 25 inches
Shale	5 inches
Coal	4 inches

In N. W. ¼ of N. W. ¼ of S. 1, T. 19, R. 7 W.

Coal	13 to 14 inches
Shale	1 inch
Coal	12 inches
Shale	8 inches
Coal	½ inch

In N. W. ¼ of N. W. ¼ of S. 2, T. 19, R. 7 W.

Coal	22 inches

In N. E. ¼ of S. E. ¼ of S. 34, T. 18, R. 7 W.

Coal smut	24 inches
Shale, clayey	4 to 5 inches
Coal smut	5 to 6 inches

In N. E. ¼ of N. W. ¼ of S. 28, T. 18, R. 7 W.

Coal smut	12 inches

In N. E. ¼ of N. W. ¼ of S. 21, T. 18, R. 7 W.

Coal	11 inches

In S. W. ¼ of S. 21 and N. W. ¼ of S. 7, of T. 18, R. 7 W.; N. E. ¼ of S. 1, T. 19, R. 8 W.; S. E. ¼ of S. 17, T. 19, R. 7 W.; and N. E. ¼ of S. 1, T. 18, R. 8 W.

Coal	6 inches

In S. E. ¼ of S. 12, T. 19, R. 8 W.

Coal	14 inches

In S. E. ¼ of S. 36, T. 18, R. 8 W.

Coal	1 inch
Shale	¼ inch
Coal	4 inches
Shale, clayey	0 to ½ inch
Coal	4 inches
Shale	¼ inch
Coal	1 inch
Shale	2 inches
Coal	1 to 2 inches

In N. E. ¼ of S. E. ¼ of S. 10, T. 18, R. 8 W.

Coal	13 inches

In S. E. ¼ of S. W. ¼ of S. 35, T. 17, R. 8 W.

Coal	10 inches

In N. W. ¼ of S. 31, and S. W. ¼ of S. 30, T. 18, R. 8 W.

Coal	11 inches

In N. W. ¼ of S. E. ¼ of S. 19, T. 18, R. 8 W.

Coal	12 inches

In N. E. ¼ of S. 34, and N. W. ¼ of S. 12, T. 18, R. 9 W.

Coal	8 inches

In S. W. ¼ of S. E. ¼ of S. 12, T. 18, R. 9 W.

Coal	17 inches

In S. E. ¼ of N. E. ¼ of S. 15, T. 18, R. 9 W.

Coal	4 inches
Shale	34 inches
Coal	9 inches
Shale	28 inches
Coal	9 inches
Shale	21 inches
Coal	2 inches
Shale	¼ inch
Coal	½ inch
Shale	8 to 9 inches
Coal	4 inches
Shale	½ inch
Coal	10 inches

In S. W. ¼ of S. E. ¼ of S. [illegible], T. [illegible], R. [illegible] W.

Coal	3 inches
Shale	15 inches
Coal	9 inches

In S. [illegible] ¼ of S. [illegible] ¼ of S. [illegible], T. [illegible], R. [illegible] W.

Coal	3 inches
Shale	1 to 2 inches
Coal	2 inches
Shale	1 inch
Coal	1 inch
Shale	2 inches
Coal	½ inch
Shale	5 inches
Coal	3 inches
Shale	4 feet
Coal	4 inches

In S. W. ¼ of S. W. of S. 17, T. 18, R. 9 W.

Coal smut	6 inches
Shale	17 inches
Coal smut	4 inches

In N. W. ¼ of N. E. ¼ of S. 15, T. 18, R. 10 W.

Coal and shale in alternate streaks	15 inches

In S. E. ¼ of N. E. ¼ of S. 21, T. 18, R. 10 W.

Coal	8 inches
Shale	¼ inch
Coal	7 inches

In S. E. ¼ of N. W. of S. 27, T. 18, R. 10 W.

Coal	3 inches
Shale	½ inch
Coal	7 to 8 inchess

In S. W. ¼ of S. E. ¼ of S. 30, T. 18, R. 9 W.

Coal	15 inches
Shale	5 to 6 inches
Coal	11 to 12 inches

In N. W. ¼ of S. E. ¼ of S. 15, T. 19, R. 10 W.

Coal	18 inches

In W. ½ of S. E. ¼ of S. 20, T. 19, R. 10 W.

Coal	14 to 15 inches

In N. E. ¼ of S. W. ¼ of S. 27, T. 19, R. 10 W.

Coal	5 inches
Shale	1 inch
Coal	1 to 2 inches
Shale	1 inch
Coal	1 to 2 inches
Shale	8 inches
Coal	1 to 2 inches

In S. E. ¼ of N. W. ¼ of S. 34, T. 19, R. 10 W.

Coal	9 inches
Shale	6 inches
Coal	2 inches
Shale	2 inches
Coal	12 inches

In N. E. ¼ of S. E. ¼ of S. 10, T. 18, R. 8 W.

Coal	18 inches

In S. E. ¼ of S. W. ¼ of S. 35, T. 17, R. 8 W.

Coal	10 inches

In N. W. ¼ of S. 31, and S. W. ¼ of S. 30, T. 18, R. 8 W.

Coal	11 inches

In N. W. ¼ of S. E. ¼ of S. 19, T. 18, R. 8 W.

Coal	12 inches

In N. E. ¼ of S. 34, and N. W. ¼ of S. 12, T. 18, R. 9 W.

Coal	8 inches

In S. W. ¼ of S. E. ¼ of S. 12, T. 18, R. 9 W.

Coal	17 inches

In S. E. ¼ of N. E. ¼ of S. 15, T. 18, R. 9 W.

Coal	4 inches
Shale	34 inches
Coal	9 inches
Shale	28 inches
Coal	9 inches
Shale	21 inches
Coal	2 inches
Shale	¼ inch
Coal	½ inch
Shale	8 to 9 inches
Coal	4 inches
Shale	½ inch
Coal	10 inches

In S. W. ¼ of S. E. ¼ of S. 9, T. 18, R. 7 W.

Coal	3 inches
Shale	15 inches
Coal	9 inches

In S. E. ¼ of S. W. ¼ of S. 8, T. 18, R. 9 W.

Coal	3 inches
Shale	1 to 2 inches
Coal	2 inches
Shale	1 inch
Coal	1 inch
Shale	2 inches
Coal	½ inch
Shale	5 inches
Coal	3 inches
Shale	8 feet
Coal	8 inches

In S. W. ¼ of S. W. of S. 17, T. 18, R. 9 W.

Coal smut	6 inches
Shale	17 inches
Coal smut	4 inches

In N. W. ¼ of N. E. ¼ of S. 15, T. 18, R. 10 W.

Coal and shale in alternate streaks	15 inches

In S. E. ¼ of N. E. ¼ of S. 21, T. 18, R. 10 W.

Coal	8 inches
Shale	¼ inch
Coal	7 inches

In S. E. ¼ of N. W. of S. 27, T. 18, R. 10 W.

Coal	3 inches
Shale	½ inch
Coal	7 to 8 inchess

In S. W. ¼ of S. E. ¼ of S. 30, T. 18, R. 9 W.

Coal	15 inches
Shale	5 to 6 inches
Coal	11 to 12 inches

In N. W. ¼ of S. E. ¼ of S. 15, T. 19, R. 10 W.

Coal	18 inches

In W. ½ of S. E. ¼ of S. 20, T. 19, R. 10 W.

Coal	14 to 15 inches

In N. E. ¼ of S. W. ¼ of S. 27, T. 19, R. 10 W.

Coal	5 inches
Shale	1 inch
Coal	1 to 2 inches
Shale	1 inch
Coal	1 to 2 inches
Shale	8 inches
Coal	1 to 2 inches

In S. E. ¼ of N. W. ¼ of S. 34, T. 19, R. 10 W.

Coal	9 inches
Shale	6 inches
Coal	2 inches
Shale	2 inches
Coal	12 inches

In N. E. ¼ of S. E. ¼ of S. 34, T. 19, R. 10 W.

Coal	6 inches
Shale	14 inches
Coal	1 to 2 inches
Shale	3 inches
Coal	2 inches
Shale	6 inches
Coal	12 inches

In S. E. ¼ of S. W. ¼ of S. 35, T. 19, R. 10 W.

Coal	9 inches
Shale	23 inches
Coal	1 to 2 inches
Shale	1 inch
Coal	10 inches

In N. E. ¼ of S. 8, T. 20, R. 8 W.

Coal	4 inches
Shale	3 inches
Coal	½ inch
Shale	5 to 6 inches
Coal	2 to 3 inches
Shale	1 to 2 inches
Coal	1 inch

In N. E. ¼ of S. W. ¼ of S. 27, T. 19, R. 10 W.

Coal	5 inches
Shale	1 inch
Coal	1 to 2 inches
Shale	1 inch
Coal	1 to 2 inches
Shale	8 inches
Coal	1 to 2 inches

In S. W. ¼ of N. E. ¼ of S. 34, T. 19, R. 10 W.

Coal	6 inches
Shale	14 inches
Coal	1 to 2 inches
Shale	3 inches
Coal	2 inches
Shale	6 inches
Coal	12 inches

In N. W. ¼ of N. E. ¼ of S. 35, T. 19, R. 10 W.

Coal	8 to 9 inches
Shale	4 to 5 inches
Coal	1 to 2 inches
Shale	2 to 3 inches
Coal	1 to 2 inches
Shale	½ inch
Coal	½ inch

In N. W. ¼ of S. W. ¼ of S. 35, T. 19, R. 10 W.

Coal	9 inches
Shale	23 inches
Coal	1 to 2 inches
Shale	1 inch
Coal	10 inches

Reported section in S. E. ¼ of S. 3; N. E. ¼ of S. 11, and N. W. ¼ of S. 12; all of T. 20, R. 10 W.

Coal	12 inches
Shale	12 inches
Coal	12 inches

In S. W. ¼ of S. E. ¼ of S. 35, T. 19, R. 10 W.

Coal, with shale streak near top, about	12 inches
Sale, below low water in North River, about	12 inches
Coal	4 inches
Shale, may be a parting with *coal* under it.	

In S. W. corner of S. 25, T. 19, R. 10 W.

Coal	1 inch
Shale	½ inch
Coal, reported	8 inches

There are other outcrops of this coal seam farther down North River, but, so far as seen, they are thin.

Near center of S. 16, T. 20, R. 8 W.

Coal	13 to 14 inches
Shale	3 inches
Coal	6 to 7 inches
Shale	¼ inch
Coal	4 to 5 inches

In N. W. ¼ of S. E. ¼ of S. 7, T. 19, R. 8 W.

Coal, shaly, with shale streaks in places	11 to 12 inches
Shale	3 to 4 inches
Coal, shaly	¼ inch
Shale	4 inches
Coal, shaly	1 inch
Shale, may have *coal* under it, visible	6 inches

There are other outcrops of this coal seam along the Black Warrior River between S. 33, T. 18, R. 8 W., and S. 30, T. 20, R. 8 W., inclusive, but they are thin so far as seen.

In reported bore-hole in N. W. ¼ of N. E. ¼ of S. 34, T. 20, R. 9 W.

Coal	5 inches
Shale	20 feet 7 inches
Coal	11 inches
Shale	17 feet 1 inch
Coal	9 inches
Shale	18 feet 3 inches
Coal	4 inches

In reported bore-hole in S. E. ¼ of S. 5, T. 21, R. 9 W.

Coal	4 inches
Shale, sandstone	27 feet 2 inches
Coal	10 inches

In reported bore-hole in N. E. ¼ of N. E. ¼ of S. 26, T. 21, R. 10 W.

Coal	24 inches

a
g
st
n
to

ly

CHAPTER VII.

THE BROOKWOOD GROUP OF COALS.

This important group of coals has usually five coal seams. These seams in an ascending order are as follows: *Clements, Johnson, Milldale, Brookwood,* and *Guide.* See Plates I and VII, and Sections 1, 2, and 3, on Map. The Clements Seam, however, in places has several thin seams and streaks of coal both over and under it, the whole comprising as much as 25 to 30 feet of strata; while in other places, in the north-west outcrops of the group, this seam appears to be entirely wanting. The lower part of the Johnson Seam splits off in places and gets to be as much as 25 to 30 feet under the top or main part of the seam. The Brookwood and Milldale seams are together in the northern outcrops and in many other places are only a few feet apart. See Plate VII.

The coal seams of this group are almost entirely above drainage level and so they have very extensive lines of outcrops for their area. They crop out along all the water courses, little and big, until their area is one net-work of outcrops. They, especially the uppermost seams, are therefore washed away over much of their territory.

The outcrops of the coal seams of this group can be traced all around their distinct basin-like area, except on the south-west where they are hid by faults and superficial deposits. They are thrown out by faults along near Hurricane Creek and North River but come in again to the south-west near Tuscaloosa, where, as a part of the most south-west visible strata of the Appalachian System, they go under Cretaceous and Tertiary strata and the Black Warrior River for good.

This group is confined to Tuscaloosa County, with the exception of some small areas in Jefferson County, on the high divides along the county line and in the synclinal trough just to the north-west of the Little Basin, or near the south-east edge of the Big Basin. In this synclinal trough, its strata, in patches, extend almost as far to the north-east as Valley Creek.

The Brookwood Seam is the main seam of the group, especially when it and the Milldale Seam are together.

This group is known to underlie some 150 square miles, only about one-fourth as much as the coals of the next underlying group. Its coals have a combined thickness of from about 6 feet to 11 feet 6 inches, with an average, for the whole lengths of outcrops, of about 9 feet. All but its top (Guide) seam are now worked in a commercial way. They had an output of 222,804 tons of coal for 1898.

THE CLEMENTS COAL SEAM.

This coal seam, called also the *Wildsmith*, *Prude*, *Chambers*, etc., seam, is of workable thickness, in a commercial way, on the outcrop only in the south-east part of the field. It thins out towards the north and north-west. In the south-east part of the field, it is split up into as many as 5 seams through as much as 50 feet of strata, provided the thin coal seams and streaks in the strata both over and under the main workable seam are counted as a part of it. It is worked in the Clements Shaft, and Prude and Clinton drifts, and has been worked in the Wheelock old drifts and the Wildsmith old slope, and in the Foster, Chambers, etc., drifts.

Its output at the Clements Shaft for 1898 was about 6,016 tons and for the first quarter of 1899 it is nearly 1600 tons per month.

OUTCPOPS OF THE CLEMENTS COAL SEAM.

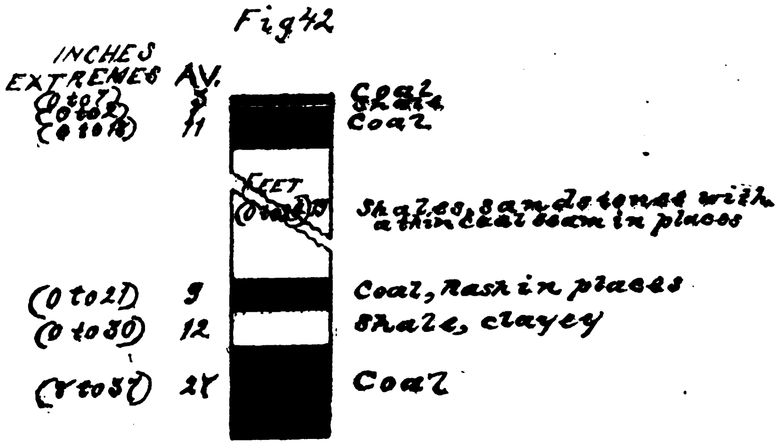
Fig 42
INCHES
EXTREMES AV.
(0 to 7) 3 Coal
(0 to 2) 1 Shale
(0 to 18) 11 Coal
FEET
Shales, sandstones with a thin coal seam in places
(0 to 21) 9 Coal, Rash in places
(0 to 30) 12 Shale, clayey
(8 to 37) 28 Coal

FIG. 42. *Average Section of the* Clements Coal Seam *in the south-east part of the Warrior Coal Field.*

In old drifts in N. E. ¼ of N. E. ¼ of S. 12, T. 22, R. 7 W.

Coal, reported	4 to 6 inches
Shale, reported	2 to 4 inches
Coal, reported	17 to 24 inches

This may be only the upper part of the seam, split off from the lower part.

In reported bore-hole in S. E. ¼ of N. E. ¼ of S. 1, T. 22, R. 8 W.

Coal	6 to 7 inches
Clay	2 inches
Coal	10 inches
Sandstone, shale	2 feet
Clay and shale	4 feet
Coal, dirty	3 to 4 inches
Clay and shale	4 feet
Sandstone, shaly	6 feet
Shale, black	10 inches
Coal, dirty	3 inches
Coal, clean	29 inches
Clay	30 inches
Sandstone	13 feet 8 inches
Shale	12 inches
Coal	1 inch
Shale, black	51 inches
Coal	4 to 5 inches

In reported shaft in N. W. ¼ of N. E. ¼ of S. 1, T. 22, R. 8 W.

Coal	4 to 10 inches
Sandstone	10 to 13 feet
Rash, (shaly coal)	4 to 5 inches
Shale, blue	8 to 10 feet
Rash (shaly coal)	3 inches
Clay	20 to 30 inches
Rash (shaly coal)	3 to 4 inches
Coal	32 to 33 inches

In reported bore-hole in E. ½ of N. W. ¼ of S. 35, T. 21, R. 8 W.

Coal	18 inches
Sandstone, shale	19 feet
Coal	12 inches
Shale, *coal*	24 inches
Coal	8 inches

Reported bore-hole in W. ½ of N. W. ¼ of S. 35, T. 21, R. 8 W.

Shale with *coal*	28 inches
Clay, black	35 inches
Coal, dirty	6 inches
Clay, black	42 inches

At old slope in N. W. ¼ of S. W. of S. 31, T. 21, R. 7 W.

Coal, thin	
Conglomerate, about	10 feet
Coal, reported	35 inches

In N. E. ¼ of N. W. ¼ of S. 31, T. 21, R. 7 W.

Coal, reported	33 inches

In N. E. ¼ of N. W. ½ of S. 30, T. 21, R. 7 W.

Coal	11 inches
Shale	1 inch
Coal	19 inches

In N. W. ¼ of S. 25; S. W. ¼ of S. 24; and S. E. ¼ of S. 23, T. 21, R. 8 W.

Coal	10 to 12 inches

In S. ½ of N. E. ¼ of S. 17, T. 21, R. 7 W.

Coal	26 to 32 inches

In N. W. ¼ of S. W. ¼ of S. 9, T. 21, R. 7 W.

Coal	2 inches
Shale	26 inches
Coal	35 inches

In S. E. ¼ of S. E. ¼ of S. 2, T. 21, R. 8 W.

Coal	12 inches

In S. W. ¼ of N. W. ¼ of S. 6, T. 21, R. 7 W.

Coal	11 inches
Shale, *coal*	4 inches

In reported bore-hole in S. W. ¼ of N. W. ¼ of S. 2, T. 21, R. 8 W.

Coal	14 inches
Rock	27 feet
Coal	6 inches
Rock	26 feet
Coal	18 inches

In N. E. ¼ of N. W. ¼ of S. 5, T. 21, R. 7 W.

Coal	2 inches
Shale, clayey	4 inches
Coal	23 inches.

In S. E. ¼ of S. 29, T. 20, R. 1 W.

Coal	27 to 28 inches

In S. W. ¼ of S. W. ¼ of S. 27, T. 20, R. 7 W.

Coal	20 to 21 inches
Shale	1 inch
Coal	18 inches

In N. E. ¼ of S. W. ¼ of S. 14, T. 20, R. 7 W.

Coal streak	
Clay and shale	12 inches
Coal, shaly	1 inch
Clay	1 inch
Coal, shaly	½ inch
Clay	2 inches
Coal and clay	1 inch
Shale, clayey	10 inches
Coal	7 inches
Clay	2 inches
Coal	12 inches

The outcrops of this coal seam under the high divide between Davis and Big Shoal creeks are from 2 to 12 inches thick. Those to the west of the Black Warrior River and along the river, are also thin. The coal seam appears to thin out in a general way towards the north and west.

In N. E. ¼ of S. W. ¼ of S. 16, T. 20, R. 8 W.

Coal	5 inches

In reported bore-hole in N. W. ¼ of S. E. ¼ of S. 35, T. 20, R. 9 W.

Coal	20 inches

In N. W. ¼ of S. E. ¼ of S. 28, T. 20, R. 9 W.

Coal	9 to 10 inches

In N. E. ¼ of N. W. ¼ of S. 7, T. 21, R. 8 W.

Coal	12 inches

In S. W. ¼ of S. 7, T. 21, R. 8 W.

Coal	12 inches
Sandstones, shales, some	25 feet
Coal	16 inches

In reported shaft in S. W. ¼ of S. E. ¼ of S. 24, T. 20, R. 9 W.

Coal	16 inches

At Olmsted in S. W. ¼ of S. E. ¼ of S. 30, T. 21, R. 8 W.

Coal	8 to 9 inches
Shale	½ inch
Coal	½ inch
Shale	½ inch
Coal	2 to 3 inches
Shale	¼ inch
Coal	1 to 2 inches

Outcrops near center of S. 31, T. 21, R. 8 W.

Coal	15 to 16 inches

In reported bore-hole at Cottondale.

Coal	25 to 30 inches

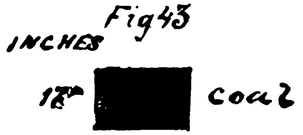

FIG. 43. *Average Section of the* Clements Coal Seam *in the Chambers, Foster and Prude Mines.*

In the Prude Upper Mine in the S. W. ¼ of N. E. ¼ of S. 22, T. 21, R. 9 W.

Coal	15 inches

In the Prude Lower Mine in the S. E. ¼ of N. W. ¼ of S. 22, T. 21, R. 9 W.

Coal	10 inches
Parting	streak
Coal	8 inches

At an other place in the last named mine.

Coal	15 inches

At *Foster Mine* in E. ½ of S. W ¼ of S. 15, T. 21, R. 9 W.

Coal	15 to 17 inches

In S. W. ¼ of N. E. ¼ of S. 15, T. 21, R. 9 W.

Coal	13 to 14 inches

At *Chambers Mines* in N. ½ of S. W. ¼ of S. 10, T. 21, R. 9 W.

Coal	14 to 15 inches

At *Chambers Mines* in S. W. ¼ of S. W. ¼ of S. 3, T. 21, R. 9 W.

Coal, reported .... 22 to 24 inches

In reported bore-hole in N. E. ¼ of N. E. ¼ of S. 26, T. 21, R. 10 W., near Tuscaloosa.

Coal and shale .... 6 inches

THE JOHNSON COAL SEAM.

This coal seam, called also the *Double, Dafforn, Factory, Hospital, McLester, Duree,* etc., seam, though more or less cut up by shale partings, is workable in most of its outcrops. Its lower part splits off until in places it gets to be 25 to 30 feet under the main seam. These two parts themselves may be split up by a few feet of strata. This seam of coal has been surface dug in a great many places. These surface diggings furnished most of the coal that was hauled in wagons to Tuscaloosa in ante-railroad times. The seam is regularly mined now at Milldale (the lower seam in the slope) and in several places near Tuscaloosa, and has been mined at the Dudley and some of the Weaver drifts near Clements, the Johnson and Ward drifts near Coaling, the Factory drifts near Cottondale, McLester Shaft near Tuscaloosa, etc, Its output of coal for 1898 was about 26,348 tons.

OUTCROPS OF JOHNSON COAL SEAM.

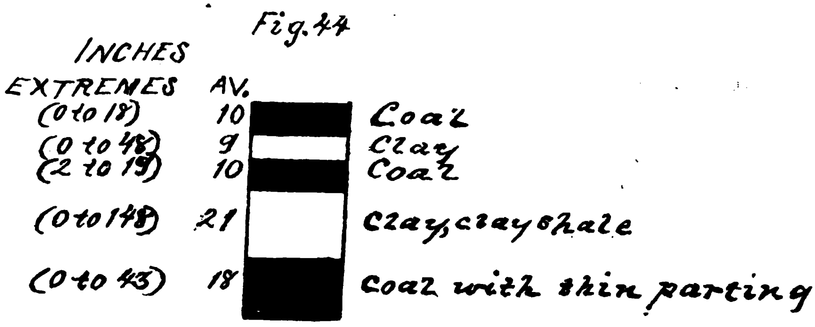

FIG. 44. *Average Section of the* Johnson Coal Seam *in the south eastern part of the Warrior Coal Field.*

In drift in N. ½ of S. E. ¼ of S. 10, T. 22, R. 8 W.

Coal	12 to 13 inches
Shale	½ inch
Coal	11 inches
Shale	3 inches
Coal	1 inch
Shale	½ inch
Coal	1 to 2 inches

At and in drifts along Lye Branch in S's 10 and 11, T. 22, R. 8 W.

Coal	13 to 15 inches
Clay	½ to 2 inches
Coal	10 to 14 inches
Clay	1 to 36 inches
Coal	2 to 9 inches
Shale	3 to 5 feet
Coal	1 to 2 inches
Shale	2 to 4 inches
Coal	4 to 5 inches

In old shaft in S. E. ¼ of S. 1, T. 22, R. 8 W.

Coal, reported	15 to 39 inches

In reported shaft in N. W. ¼ of N. E. ¼ of S. 1, T. 22, R. 8 W.

Coal	6 to 8 inches
Shale	4 to 5 inches
Coal	10 to 13 inches

In reported bore-hole in S. E. ¼ of N. W. ¼ of S. 35, T. 21, R. 8 W.

Coal	6 inches
Shale with some *coal*	20 feet

In reported bore-hole in W. ½ of N. W. ¼ of S. 35, T. 21, R. 8 W.

Coal, outcrop	12 inches
Clay	24 inches
Coal	14 inches
Clay, sandstone	48 inches
Shale (black) and sandstone	100 inches
Coal	5 inches
Shale	2 inches
Coal	5 inches

In N. W. ¼ of S. W. ¼ of S. 26 and S E. ¼ of N. E. ¼ of S. 27, T. 21, R. 8 W.

Coal	10 to 14 inches

In S. W. ¼ of S. W. ¼ of S. 16, T. 21, R. 8 W.

Coal	2 to 3 inches
Bony (shaly) *coal*	2 to 3 inches
Coal	3 inches
Shale	½ inch
Coal	1 inch
Bony (shaly) *coal*	3 inches
Shale	½ inch
Coal	5 to 6 inches
Shale	¼ inch
Coal	7 to 8 inches

In S. E. ¼ of N. E. ¼ of S. 10, T. 21, R. 8 W.

Coal	5 to 6 inches
Shale	2 to 3 inches
Coal	6 to 7 inches
Shale	1 inch
Coal	1 to 2 inches
Shale	2 inches
Coal	1 to 2 inches
Shale	1 to 2 inches
Coal	2 to 3 inches
Shale	1 inch
Coal	11 to 12 inches

In N. W. ¼ of S. E. ¼ of S. 12, T. 21, R. 8 W.

Coal	28 inches

At drifts along Hurricane Creek in S. 17, T. 21, R. 7 W.

Coal	0 to 9 inches
Shale	0 to 30 inches
Coal	2 to 9 inches
Shale, irony in places	¾ to 48 inches
Coal, with thin shale parting in places	25 to 34 inches

Reported outcropping in S. 11, T. 21, R. 8 W.

Coal	7 inches
Shale	1 to 2 inches
Coal	6 to 7 inches
Shale	5 inches
Coal	1 to 2 inches
Shale	1 inch
Coal	1 to 2 inches
Shale	1 to 2 inches
Coal	13 inches

In S. E. ¼ of S. E. ¼ of S. 2, T. 21, R. 8 W.

Coal	9 inches
Shale, clayey, with *coal* streaks	8 to 10 inches
Coal, shaly	5 inches
Coal, good	7 inches
Mother of coal	1 to 2 inches
Coal	5 inches
Shale, *coal* in streaks	4 inches
Coal	1 inch
Shale	1 inch
Coal	11 to 12 inches

Some 75 to 80 yards to north-east of last outcropping.

Coal	10 inches
Shale with *coal*	9 inches
Coal	10 inches
Shale	1 inch
Coal	5 inches
Shale	3 inches
Coal	17 inches

In S. E. ¼ of N. W. ¼ of S. 1, T. 21, R. 8 W.

Coal little shaly at top	8 to 9 inches
Coal (shaly) and shale (black)	8 inches
Coal	8 inches
Shale, black and clayey	1 inch
Coal	7 to 8 inches
Shale	¼ inch
Coal	11 to 12 inches

Reported outcroppings in S. 1, T. 21, R. 8 W.

(1)

Coal	10 inches
Shale	10 inches
Coal	10 inches
Shale	2 inches
Coal	5 inches
Shale	¼ inch
Coal	2 to 3 inches
Shale	¼ inch
Coal	3 inches
Shale	1 to 2 inches
Coal	11 inches
Shale	1 inch
Coal	2 inches

(2)

Coal	8 inches
Shale	½ inch
Coal	1 inch
Shale	¼ inch
Coal	11 to 12 inches
Shale	1 to 2 inches

(OVER)

Coal	9 inches
Shale	1 inch
Coal	8 inches
Shale	1 inch
Coal	1 inch

(3)

Coal	5 to 6 inches
Shale	1 to 2 inches
Coal	10 inches
Shale	1 to 2 inches
Coal	12 inches
Shale	¼ inch
Coal	3 to 4 inches
Shale	1 inch
Coal	2 inches

In S. W. ¼ of S. W ¼ of S. 27, T. 20, R. 7 W.

Coal	31 inches
Shale	4 inches
Coal	1 inch
Shale	1 inch
Coal	2 to 3 inches

In N. E. ¼ of N. W ¼ of S. 23, T. 20, R. 7 W.

Coal	30 to 33 inches

In S. E. ¼ of S. W. ¼ of S. 14, T. 20, R. 7 W.

Coal	16 inches
Shale	¼ inch
Coal	8 inches

Lower coal in Milldale Slope, the seam that is now being mined, said to be about the same as that of last section.

To north-east of last outcrop across railroad and a ravine.

Coal smut	14 inches
Clay	1 inch
Coal smut	11 inches

In N. W. ¼ of N. W. ¼ of S. 29, T. 19, R. 6 W.

Coal smut	18 inches
Shale	4 feet
Coal smut	2 inches

In S. W. ¼ of N. E. ¼ of S. 20, T. 19, R. 6 W.

Coal	24 inches

In S. W. ¼ of S. 5, T. 20, R. 7 W.

Coal	8 to 9 inches
Shale	¼ inch
Coal	2 to 3 inches

In S. E. ¼ of S. E. ¼ of S. 7, T. 20, R. 7 W.

Coal	15 inches
Shale, black and clayey	5 inches
Coal, with thin parting near middle in places	2 to 3 inches

In N. E. ¼ of N. W. ¼ of S. 16, T. 19, R 7 W.

Coal smut	14 to 15 inches
Shale	11 inches
Coal	1 inch

In N. W. ¼ of N. W. ¼ of S. 3, T. 19, R. 7 W.

Coal	12 inches
Shale	1 inch
Coal	½ inch
Shale	4 to 5 inches
Coal	5 inches

In the N. W. ¼ of N. W. ¼ of S. 19, T. 19, R. 7 W.

Coal smut	14 inches
Shale	1 inch
Coal smut	2 to 3 inches
Shale	½ inch
Coal smut	6 inches

In S. E. ¼ of S. 3, T. 20, R. 8 W.

Coal	16 inches

In N. W. ¼ of S. 9, T. 20, R. 8 W.

Coal	23 to 24 inches

In N. W. ¼ of N. W. ¼ S. 22, T. 20, R. 8 W.

Coal smut	10 to 11 inches
Shale	3 inches
Coal smut	6 inches
Shale	6 to 7 inches
Coal smut	½ inch
Shale	1 to 2 inches
Coal smut	1 to 2 inches
Shale	3 inches
Coal smut	1 to 2 inches
Shale	1 to 2 inches
Coal smut	¾ inch
Shale	7 inches
Coal smut	7 to 8 inches

In N. E ¼ of N. W. ¼ of S. 33, T. 20, R. 8 W.

Coal	12 inches
Shale	1 to 2 inches
Coal	2 to 3 inches

Reported outcrop in S. 18, T. 20, R. 7 W.

Coal	18 inches
Shale	½ inch
Coal	10 inches

In S. E. ¼ of N. W. ¼ of S. 30, T. 20, R. 7 W.

Coal, with thin parting in places	14 to 20 inches
Shale	½ to 1 inch
Coal	13 to 14 inches

In reported bore-hole at Brookwood in S. E. ¼ of N. W. ¼ of S. 30, T. 20, R. 7 W.

Coal	13 inches
Shale	1 inch
Coal	18 inches

In S. E. ¼ of N. W. ¼ of S. 27, T. 20, R. 8 W.

Coal	15 inches
Shale	5 inches
Coal	9 inches
Shale	1 to 2 inches
Coal	7 inches
Shale	1 inch
Coal	9 inches

At the *Ash Old Mine* in S. E. ¼ of S. W. ¼ of S. 1, T. 21, R. 9 W.

Coal	¾ to 8 inches
Shale	¾ to 8 inches
Coal	1 to 6 inches
Shale	2 to 10 inches
Coal	11 inches
Shale	6 inches
Coal and shale	7 inches
Coal	14 inches

At the *Manly Old Coal Bed* in N. W. ¼ of N. E. ¼ of S. 1, T. 21, R. 9 W.

Coal	15 to 16 inches

In S. E. ¼ of S. W. ¼ of S. 1, T. 21, R. 9 W.

Coal and shale	28 inches
Coal	23 inches

In S. W. ¼ of N. W. ¼ of S. 6, T. 21, R. 8 W.

Coal	5 to 7 inches
Shale, black	¼ inch
Coal	9 to 11 inches
Shale	¼ to ½ inch
Coal	15 to 16 inches

In N. E. ¼ of S. W. ¼ of S. 6, T. 21, R. 8 W.

Coal, little shaly at bottom	5 inches
Shale, clayey	19 inches
Coal, bony	6 to 7 inches
Shale, black	½ inch
Coal	10 inches
Shale, black	1 to 2 inches
Coal	15 inches

At drift in N. E. ¼ of S. E. ¼ of S. 12, T. 21, R. 9 W.

Coal, with two thin partings in places	6 to 8 inches
Shale	½ to ¾ inch
Coal	10 to 11 inches
Shale	2 to 3 inches
Coal	12 to 15 inches

At old drift in N. E. ¼ of S. E. ¼ of S. 13, T. 21, R. 9 W.

Coal	8 to 10 inches
Shale	2 inches
Coal, with a thin parting in places	13 to 15 inches

In S. W. ¼ of S. E. ¼ of S. 19, T. 21, R. 8 W.

Coal	6 to 7 inches
Shale	1 to 2 inches
Coal	9 to 10 inches
Shale	2 inches
Coal	2 to 3 inchse
Shale	2 inches
Coal	¼ inch

In S. E. ¼ of S. E. ¼ of S. 24, T. 21, R. 9 W.

Coal	5 inches
Shale	3 inches
Coal	7 inches
Shale	1 inch
Coal	1 inch
Shale	¾ inch
Coal	6 inches
Shale	5 inches
Coal	¼ inch
Shale	5 inches
Coal	2 to 3 inches
Shale	½ inch
Coal	1 to 2 inches

In N. E. ¼ of S. E. ¼ of S. 24, T. 21, R. 9 W.

Coal	6 to 8 inches
Shale	1 to 2 inches
Coal, with shale partings in places	8 inches
Shale	1 to 2 inches
Coal	6 to 9 inches
Clay with *coal* streaks	9 to 26 inches
Coal	1 to 8 inches

In N. E. ¼ of N. E. ¼ of S. 25, T. 21, R. 9 W.

Coal	4 to 5 inches
Shale	1 to 2 inches
Coal, shaly	1 to 6 inches
Shale	1 to 2 inches
Coal	4 to 5 inches
Shale	2 inches
Coal	6 inches
Sandstone, shale, debris	28 to 30 feet
Coal	10 inches
Clay	18 inches
Coal, reported	1 inch

In N. W. ¼ of S. 25, T. 21, R. 9 W.

Coal	0 to 5 inches
Shale	0 to 2 inches
Coal	1 to 8 inches
Shale	1 to 2 inches
Coal	5 to 8 inches
Shale	1 to 2 inches
Coal	4 to 9 inches
Clay	18 to 28 inches
Coal, shaly	1 to 2 inches

In railroad cut in S. W. ¼ of S. E. ¼ of S. 30, T. 21, R. 8 W.

Coal, lower bench	12 to 13 inches

In S. W. ¼ of S. W. ¼ of S. 12, T. 21, R. 9 W.

Coal	17 to 18 inches
Shale	1 inch
Coal	2 inches
Shale	1 inch
Coal	10 inches

In N. E. ¼ of S. W. ¼ of S. 12, T. 21, R. 9 W.

Coal	4 inches
Shale	½ inch
Coal	2 inches
Shale	¼ inch
Coal	9 to 10 inches
Shale	2 to 3 inches

(OVER)

Coal	8 inches
Shale	1 to 2 inches
Coal	5 inches
Shale	¼ inch
Coal	3 inches

In S. E. ¼ of N. E. ¼ of S. 11, T. 21, R. 9 W.

Coal	18 inches
Shale	2 inches
Coal	9 inches

In N. E. ¼ of N. W. ¼ of S. 12, T. 21, R. 9 W.

Coal, with bony streak	16 to 17 inches
Shale	2 inches
Coal	2 to 3 inches
Shale	2 inches
Coal	4 inches

In S. W ¼ of S. E. ¼ of S. 2, T. 21, R. 9 W.

Coal	4 inches
Shale	¼ inch
Coal	2 inches
Shale	½ inch
Coal	9 inches
Shale	3 inches
Coal	3 inches
Shale	1 inch
Coal	4 inches

In N. W. ¼ of S. E. ¼ of S. 2, T. 21, R. 9 W.

Coal smut	1 to 2 inches
Shale	3 inches
Coal smut	11 to 12 inches
Shale	1 inch
Coal	2 to 3 inches

Fig. 45

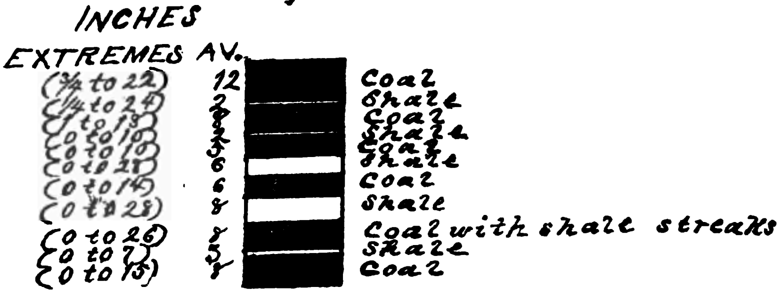

FIG. 45. *Average Section of the* Johnson Coal Seam *in the central and western parts of the Warrior Coal Field.*

In N. W. ¼ of S. W. ¼ of S. 35, T. 20, R. 9 W.

Coal	13 to 14 inches
Shale streak	
Coal	9 to 10 inches
Shale	½ inch
Coal	2 inches
Shale	½ inch
Coal	2 inches

In reported borehole in N. E. ¼ of S. W. ¼ of S. 35, T. 20 R. 9 W.

Coal	15 inches

In S. E. ¼ of S. E. ¼ of S. 26, T. 20, R. 9 W.

Coal	18 inches

In N. W. ¼ of S. E. ¼ of S. 25, T. 20, R. 9 W.

Coal	17 to 18 inches

In N. W. ¼ of N. W. ¼ of S. 19, T. 20, R. 8 W.

Coal, about	12 inches
Shale	½ inch
Coal	8 to 9 inches

In S. W. ¼ of S. W. ¼ of S. 18, T. 20, R. 8 W.

Coal, with probably a thin parting	25 inches

In N. W. ¼ of N. W. ¼ of S. 12, T. 20, R. 9 W.

Coal smut	14 inches
Shale, clayey	3 inches
Coal smut	3 to 4 inches
Shale, clayey	1 inch
Coal	3 inches

In S. W. ¼ of S. 2, T. 20, R. 9 W.

Coal, about	2 inches
Shale, streak	
Coal	12 inches
Shale	1 inch
Coal	6 inches

Reported outcropping in S. 1, T. 19, R. 9 W.

Coal	22 inches
Shale	2 inches
Coal	10 inches

Reported outcropping in S. 12, T. 20, R. 9 W.

Coal	18 inches
Shale	4 inches
Coal	6 inches

Reported outcropping in S. 13, T. 20, R. 9 W.

Coal	21 to 22 inches

Reported outcropping in S. 22, T. 20, R. 9 W.

Coal	22 inches
Shale	1 to 2 inches
Coal	2 inches

Reported outcropping in S. 27, T. 20, R. 9 W.

Coal	21 inches
Shale	24 inches
Coal	12 inches

Reported outcropping in S. W. ¼ of N. E. ¼ of S. 27, T. 20, R. 9 W.

Coal	22 inches
Shale	5 inches
Coal	10 inches

In N. W. ¼ of S. E. ¼ of S. 13, T. 19, R. 9 W.

Coal	14 to 15 inches
Shale	¾ inch
Coal	2 to 3 inches

In N. E. ¼ of S. W. ¼ of S. 31, T. 18, R. 8 W.

Coal	12 inches

In S. E. ¼ of N. E. ¼ of S. 5, T. 19, R. 9 W.

Coal	14 to 15 inches
Shale	2 to 4 inches
Coal	½ to 2 inches
Shale	½ to 2 inches
Coal	1 to 2 inches
Shale	½ inch
Coal	4 to 5 inches
Shale	1 inch
Coal	1 to 2 inches

In S. W. ¼ of N. W. ¼ of S. 14, T. 19, R. 9 W.

Coal	14 to 15 inches

Reported outcroppng in S. 16, T. 19, R. 9 W.

Coal	28 inches

In S. E. ¼ of N. E. ¼ of S. 17, T. 19, R. 9 W.

Coal smut	13 to 14 inches

Reported outcropping in S. 23, T. 19, R. 9 W.

Coal	14 inches
Shale	1 inch
Coal	8 inches

Reported outcropping in S. 33, T. 19, R. 9 W.

Coal	22 inches
Shale	3 inches
Coal	8 inches

In N. W. ¼ of S. W. ¼ of S. 17, T. 20, R. 9 W.

Coal	15 to 16 inches
Shale	1 to 2 inches
Coal	8 to 9 inches
Shale	3 to 4 inches
Coal	4 to 5 inches

In S. E. ¼ of S. E. ¼ of S. 9, T. 19, R. 9 W.

Coal	17 to 18 inches
Shale	½ inch
Coal	8 to 9 inches

In S. E. ¼ of S. E. ¼ of S. 15, T. 20, R. 9 W.

Coal smut	21 to 22 inches
Shale	4 inches
Coal smut	7 to 8 inches

In N. W ¼ of N. W. ¼ of S. 22, T. 20, R. 9 W.

Coal	15 inches
Shale	4 inches
Coal	11 inches

In S. W. ¼ of N. E. ¼ of S. 20, T. 20, R. 9 W.

Coal	4 to 5 inches
Shale,streak	
Coal	2 inches
Shale,clayey	1 inch
Coal	2 inches
Shale	2 inches
Coal	4 inches
Shale	8 inches
Coal	14 inches

In S's 21 and 27, T. 20, R. 9 W.

Coal, with two thin partings in places	8 to 9 inches
Shale	½ to 1 inch
Coal	2 inches
Shale	¾ to 1 inch
Coal	4 to 5 inches
Shale	24 to 28 inches
Coal	13 to 14 inches

In N. W. ¼ of N. W. ¼ of S. 35, T. 20, R. 9 W.

Coal smut	9 to 10 inches
Shale	1 to 2 inches
Coal smut	4 inches

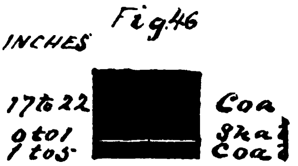

FIG. 46. *Average Section of the* Johnson Coal Seam *in the mines near Tuscaloosa, in the south-west end of the Warrior Coal Field.*

In *Duree Old Shaft* in S. E. ¼ of N. E. ¼ of S. 10, T. 21, R. 10 W.

Coal	17 inches
Shale, black	0 to 1 inch
Coal	3 to 4 inches

In *Duree New Shaft* in S. E. ¼ of N. E. ¼ of S. 10, T. 21, R. 10 W.

Coal, with streaks of shale 1 and 3 inches from bottom	23 inches

In *Hospital Shaft* in N. W. ¼ of S. W. ¼ of S. 13, T. 21, R. 10 W.

Coal, with a thin parting in places	17 to 19 inches
Shale	½ inch
Coal	4 to 5 inches

Reported Section in *McLester Shaft* in edge of Tuscaloosa (in S. W. ¼ of S. W. ¼ of S. 14, T. 21, R. 10 W.)

Coal	5 to 6 inches
Sandstone, shale, about	12 feet
Coal	18 to 20 inches

An other reported section of the McLester shaft gave only the lower coal.

In reported boring in N. E. ¼ of N. E. ¼ of S. 26, T. 21, R. 10 W.

Conglomerate with *coal*	6 feet 10 inches
Sandstone, conglomerate, shale	6 eet 0 inches
Conglomerate with *coal*	2 feet 6 inches

THE MILLDALE COAL SEAM.

This coal seam (*Wheelock, Garland,* etc., seam) is a separate seam only in the southern and south-eastern parts of the coal field, being the lower part (bench) of the overlying (Brookwood) seam in the northern and north-western parts of the field. At Brookwood it is 38 feet under the main (Brookwood) seam, though the usual distance is less than 10 feet. It is generally a very pure coal of excellent quality for steaming and blacksmithing purposes. In most of its outcrops between Davis and Hurricane creeks, to the east of the Black Warrior River, it is from 24 to 30 inches thick. It has been regularly mined at Brookwood and Milldale, and surface dug in a great number of places. Its coal output for 1898 was about 137,440 tons.

OUTCROPS OF MILLDALE COAL SEAM.

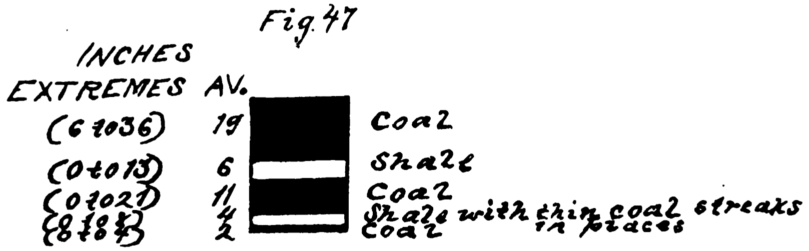

FIG. 47. *Average Section of the* Milldale Coal Seam.

Outcrop in S. W. ¼ of S. E. ¼ of S. 2, T. 22, R. 8 W.

Coal, reported	8 to 10 inches

In S. W. ¼ of N. E. ¼ of S. 1, T. 22, R. 8 W.

Coal smut	6 to 7 inches
Shale	4 inches
Coal smut	1 inch
Shale	2 to 3 inches
Coal smut	½ inch
Shale	5 inches
Coal smut	3 to 4 inches

In shaft in N. W. ¼ of N. E. ¼ of S. 1, T. 22, R. 7 W.

Coal, reported	15 inches

In reported bore-hole in N. W. ¼ of S. E. ¼ of S. 26, T. 21, R. 8 W.

Coal	12 inches

Outcrop in S. E. ¼ of S. E. ¼ of S. 27, T. 21, R. 8 W.

Coal	8 inches
Shale	13 inches
Coal	9 inches

In S. W. ¼ of S. W. ¼ of S. 26, T. 21, R. 8 W.

Coal, reported	12 to 14 inches

In N. W. ¼ of N. W. ¼ of S. 21, T. 21, R. 8 W.

Coal smut	8 inches
Shale	13 inches
Coal smut	9 inches

In S. W. ¼ of S. W. ¼ of S. 31, T. 20, R. 7 W.

Coal, reported	30 inches

At Milldale in S. E. corner of S. 15, T. 20, R. 7 W.

Coal	26 to 30 inches

In S. E. ¼ of N. E. ¼ of S. 15, T. 20, R. 7 W.

Coal	28 inches

In S. 32, T. 19, R. 7 W.

Coal, reported	12 inches

In S. E. ¼ of S. 13, T. 19, R. 8 W.

Coal	18 inches

In N. W. ¼ of S. E. ¼ of S. 12, T. 21, R. 9 W.

Coal, reported	18 inches

In S. W. ¼ of N. W. ¼ of S. 13,T. 21, R. 9 W.

Coal smut	18 inches

In N. E. ¼ of S. E. ¼ of S. 12, T. 21, R. 9 W.

Coal smut	16 to 17 inches
Shale	2 inches
Coal smut	9 inches

Reported outcropping in S. 1, T. 21, R. 8 W.

Coal	22 inches

Reported outcropping in S. 2, T. 21, R. 8 W.

Coal	30 inches

The outcrops from 18 *to* 30 *inches thick in* N. W. ¼ of S. W. ¼ of S. 34 and N. W. ¼ of S. E. ¼ of S. 36, T. 20, R. 8 W and in N. W. ¼ of N E ¼ of S 2, T 21, R 8 W., are most probably of this coal seam.

In the E. ½ of N. E. ¼ of S. 7, T. 20, R. 7 W.

Brookwood Coal Seam	
Shale, clayey	19 to 20 inches
Coal (Milldale Seam)	23 inches

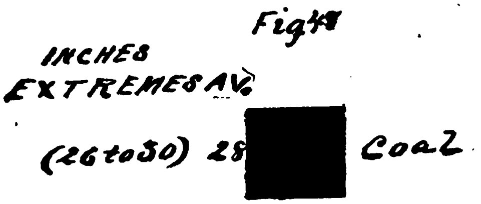

FIG. 48. *Average Section of the* Milldale Coal Seam *at Brookwood and Milldale.*

Section in the Mines at Brookwood in the S. E. ¼ of N. W. ¼ of S. 30, T. 20, R. 7 W.

Coal, reported	28 to 29 inches

In S. 18, T. 20, R. 7 W.

Coal, reported	27 inches

In S. 29, T. 20, R. 7 W.

Coal	31 inches

In the N. E. corner of S. 13, T. 20, R. 8 W.

Coal (*Brookwood Seam*).	
Shale, clayey, about	36 inches
Coal (*Milldale Seam*), reported	24 inches

In the S. E. ¼ of S. W. ¼ of S. 12. T. 20, R. 8 W.

Coal (*Brookwood Seam*).	
Shale, clayey, reported	18 inches
Coal (*Milldale Seam*), reported	24 inches

In S. E. ¼ of N. E. ¼ of S. 12, T. 20, R. 8 W

Coal, reported	31 to 36 inches

In N. E. corner of S. 16, T. 20, R. 8 W.

Coal, Brookwood Seam.	
Shale, clayey	24 inches
Coal	8 to 9 inches
Shale	3 to 4 inches
Coal	20 to 21 inches

In N. E. ¼ of N. W. ¼ of S. 6, T. 21, R. 8 W.

Coal	18 inches

In S. E. ¼ of N. W. ¼ of S. 6, T. 21, R. 8 W.

Coal	16 inches

In reported bore-hole in N. E. ¼ of S. W. ¼ of S. 35, T. 20, R. 9 W.

Coal	12 inches

In reported boring in N. E. ¼ of N. E. ¼ of S. 26 ,T. 21, R. 10 W., near Tuscaloosa.

Coal	4 inches

THE BROOKWOOD COAL SEAM.

This coal seam, known also as the *University*, *Tidewater*, *Blocker*, *Kyle*, *Collins*, *Perkins*, etc., seam, is more or less cut up by shale partings, though it is workable in nearly all of its outcrops except those under the high divides south of Big Shoal Creek east of the river and south of Blue Creek west of the river. It is a big, thick seam in many places, especially along and some distance to the north of where it and its under bench, the Milldale Seam, come together or are only from 18 to 36 inches apart. It thins out towards the north-west. It is now mined in the Brookwood, Tidewater, and Blair drifts and Coaling Slope, and has been mined in the Koepel and Weaver drifts. It has been surface dug in a number of places. Its coal makes a good coke. Its coal output for 1898 was about 53,000 tons.

OUTCROPS OF THE BROOKWOOD COAL SEAM.

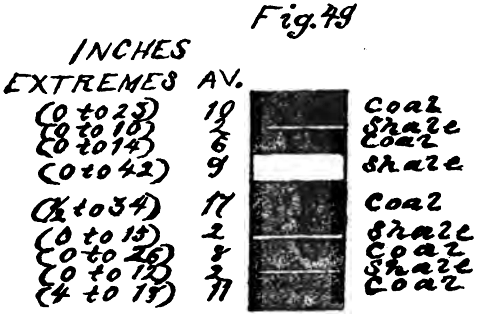

FIG. 49. *Average Section of the* Brookwood Coal Seam *to the east of the Black Warrior River.*

At slope in N. W. ¼ of N. E. ¼ of S. 11, T. 22, R. 8 W.

Coal	12 to 14 inches
Clay	10 to 14 inches
Coal	21 to 24 inches

At slope in N. E. ¼ of S. E. ¼ of S. 36, T. 21, R. 8 W.

Shale and *coal*	6 inches
Shale	36 inches
Coal	24 to 26 inches

At coal bed in western part of S. 30, T. 21, R. 7 W.

Coal	8 to 9 inches
Shale	3 to 4 inches
Coal	20 inches

At drifts in N. W. ¼ of S. E. ¼ of S. 26, T. 21, R. 8 W.

Coal	3 to 9 inches
Shale	1 to 3 inches
Coal	1 to 3 inches
Shale	2 to 11 inches
Coal	4 to 14 inches

In S. W. ¼ of N. E. ¼ of S. 27, T. 21, R. 8 W.

Coal smut	10 inches
Shale with *coal streaks*	6 feet
Coal	18 to 20 inches

In S. E. ¼ of S. W. ¼ of S. 1, T. 21, R. 8 W.

Brookwood Seam	*Coal*	7 to 8 inches
	Shale, clayey	5 to 6 inchse
	Coal	6 inches
	Shale, *coal,* in streaks	8 inches
	Coal, about	11 inches
	Shale, *coal,* in streaks	5 inches
	Shale, clayey	10 feet
Milldale Seam	*Coal,* reported	2 feet
	Shale, reported	2 inches
	Coal, reported	12 inches

In S. W. ¼ of S. 29, T. 20, R. 7 W.

Coal	8 inches
Shale	10 inches
Coal	8 inches
Shale, clayey	42 inches
Coal	19 inches
Shale	2 inches
Coal	8 inches
Shale	3 inches
Coal	12 snches

In N. E. ¼ of S. W. ¼ of S. 29, T. 20, R. 7 W.

Coal smut	9 inches
Shale	7 inches
Coal	10 inches
Shale, clayey	42 inches
Coal	19 inches
Shale	½ inch
Coal	11 inches
Shale	1 inch
Coal	15 inches

Reported outcrop in S. 29, T. 10, R. 7 W.

Coal	6 inches
Shale	½ inch
Coal	37 inches

In S. E. ¼ of S. E. ¼ of S. 15, T. 20, R. 7 W.

Coal	7 to 8 inches
Shale	½ inch
Coal	5 inches
Shale	¾ inches
Coal	5 to 6 inches
Shale	2 to 3 inches
Coal	14 to 15 inches

In S. E. ¼ of N. W. ¼ of S. 16, T. 19, R. 6 W.

Coal	19 to 20 inches
Shale	2 inches
Coal	4 inches
Shale	3 inches
Coal	18 inches

In N. E. ¼ of N. W. ¼ of S. 16, T. 19, R. 6 W.

Coal	3 inches
Shale, clayey	3 to 4 feet
Coal	24 inches

In S. E. ¼ of S. E. ¼ of S. 31, T. 18, R. 5 W.

Coal	4 inches
Shale	10 inches
Coal	6 inches
Shale	5 inches
Coal	14 inches
Shale	6 inches
Coal	26 inches
Shale, clayey	12 inches
Coal	15 inches

In S. E. corner of S. 31, T. 18, R. 5 W.

Coal	6 inches
Shale	9 inches
Coal	6 inches
Shale	7 inches
Coal	11 inches
Shale	9 inches
Coal	22 inches

In S. W. ¼ of S. E. ¼ of S. 17, T. 19, R. 6 W.

Coal, reportd	24 inches

In E. ½ of N. E. ¼ of S. 7, T. 20, R. 7 W.

Coal	7 inches
Shale (black) with some *bone coal*	3 to 4 inches
Coal	9 to 10 inches
Shale (black) with some *bone coal*	1 to 2 inches
Coal	7 to 8 inches
Shale (black) with some *bone coal*	1 to 2 inches
Coal	13 to 15 inches
Shale, clayey, with *coal streaks* in places	18 to 20 inches
Coal (*Milldale Seam*)	22 to 23 inches

In N. W. ¼ of S. E. ¼ of S. 32, T. 19, R. 7 W.

Coal	4 to 5 inches
Shale	½ inch
Coal smut	13 to 14 inches
Shale	½ inch
Coal smut	3 to 4 inches
Shale	½ inch
Coal smut	2 to 3 inches
Shale	1 inch
Coal smut	9 to 10 inches
Shale	1 to 2 inches
Coal smut	19 to 20 inches
Shale	½ inch
Coal smut	8 inches
Shale	6 inches
Coal	11 to 12 inches

Reported outcrop in S. 32, T. 19, R. 7 W.

Coal	5 inches
Mother of coal	½ inch
Coal	11½ inches
Clay	¾ inch
Coal	3½ inches
Clay	2 inches
Bony coal	4 inches
Coal	7½ inches
Bony coal	2 inches
Coal	7 inches
Bony coal	2½ inches
Coal	10½ inches
Clay	½ inch
Coal	8 inches
Slate	5 inches
Coal	12 inches

In N. E. ¼ of S. E. ¼ of S. 30, T. 19, R. 7 W.

Coal smut	20 to 21 inches
Shale	1 to 2 inches
Coal smut	6 to 7 inches
Shale	1 inch
Coal smut	9 inches
Shale	2 inches
Coal smut	3 inches
Shale	4 inches
Coal smut	6 inches

In N. W. ¼ of S. 29, T. 19, R. 7 W.

Coal smut	20 inches
Shale	1 to 2 inches
Coal smut	4 to 5 inches
Shale	¼ inch
Coal smut	5 inches
Shale	3 inches
Coal smut	3 to 4 inches

In N. W. ¼ of N. W. ¼ of S. 19, T. 19 ,R. 7 W.

Coal smut	12 inches
Shale	½ inch
Coal smut	4 to 5 inches
Shale	5 inches
Coal smut	5 inches
Shale	½ inch
Coal smut	13 inches

Reported outcropping in S. W. ¼ of S. W. ¼ of S. 13, T. 19, R. W.

Coal smut	18 inches
Coal	8 inches
Shale	10 inches
Coal	5 to 6 inches
Shale	14 to 15 inches
Coal	22 to 23 inches

In N. W. ¼ of S. E. ¼ of S. 15, T. 19, R. 8 W.

Coal smut	22 to 23 inches
Shale	2 to 3 inches
Coal smut	4 to 5 inches
Shale	½ inch
Coal smut	7 inches

In S. W. ¼ of S. 36, T. 19. R. W.

Coal	6 inches
Shale	2 to 3 inches
Coal	3 to 4 inches
Shale	14 to 15 inches
Coal	20 inches

In S. E. ¼ of S. 3, T. 20, R. .8 W.

Coal smut	6 inches
Shale	1 inch
Coal smut	3 inches
Shale	14 inches
Coal	21 inches

In N. E. corner of S. 16, T. 20, R. 8 W.

Coal	15 to 17 inches
Shale, *bony coal* in places	4 to 5 inches
Coal, with thin shale parting in places	16 to 17 inches
Shale	1 to 2 inches
Coal	6 inches
Shale	2 inches
Coal	5 to 6 inches
Shale, clayey	24 inches
Coal	8 to 9 inches
Shale	3 to 4 inches
Coal	20 to 21 inches

In N. E. corner of S. 13, and S. E. corner of S. 12, T. 20, R. 8 W.

Coal	17 to 18 inches
Shale	1 to 3 inches
Coal	9 to 11 inches
Shale	¾ to 2 inches
Coal	9 to 10 inches
Shale	½ to 2 inches
Coal	11 to 12 inches
Shale, clayey	23 to 36 inches
Coal, (*Milldale Seam*) under water, reported	24 to 28 inches

Reported outcrop in S. 18, T. 20, R. 7 W.

Coal	4 inches
Clay	½ inch
Coal	13¾ inchs
Bony coal	2½ inches
Coal	9 inches
Bony coal	1½ inches
Coal	9½ inches
Bony coal	1½ inches
Coal	13 inches
Shale and clay	30 inches
Coal (Milldale)	27 inches

This is probably of the same outcrop as the last one.

At Brookwood in N. E. ¼ of S. 30, T. 20, R. 7 W.

Guide Seam	*Coal*	8 inches
	Shale	4 inches
	Coal	11 to 12 inches
	Shale, about	6 feet
Brookwood Seam	*Coal*	2 to 3 inches
	Shale	½ inch
	Coal	30 to 31 inches
	Shale, black	½ inch
	Coal	2 inches
	Shale	¾ inch
	Coal	10 to 11 inches

Reported section in *Drift No. 4, Brookwood*

Coal	2¼ inches
Mud	¾ inch
Coal	1¾ inches
Mud	½ inch
Coal	20 inches
Shale	1¼ inches
Coal	8¼ inches
Shale	1¼ inches
Coal	10 inches

Reported section in *Brookwood Mines.*

Rash	4 inches
Coal.	18 inches
Coal.	11 to 12 inches
Bone coal or shale	1 inch
Shale	½ inch
Coal	10 inches

In N. W. ¼ of N. W. ¼ of S. 22, T. 20, R. 8 W.

Coal smut.	5 inches
Shale	½ inches
Coal smut	2 to 3 inches
Shale	1 to 2 inches
Coal smut	2 to 3 inches
Shale	2 inches
Coal smut	5 inches
Shale	1 inch
Coal smut	7 inches
Shale	½ inches
Coal smut	4 to 5 inches

In S. W. ¼ of N. E. ¼ of S. 33, T. 20, R. 8 W.

Coal	16 inches
Shale	1 to 2 inches
Coal	2 to 3 inches
Shale	½ inches
Coal	16 inches

In S. E. ¼ of N. W. ¼ of S. 6, T. 21, R. 8 W.

Brookwood Seam	*Coal smut*	1 inch
	Shale	½ inches
	Coal smut	1 to 2 inches
	Shale, about	30 inches
	Coal	½ inch
	Shale	3 inches
	Coal	2 to 3 inches
	Shale	7 to 8 inches
	Coal, shale	1 to 2 inches
	Coal	3 inches
	Shale, about	24 inches
Milldale Seam	*Coal*	½ inch
	Shale	½ inch
	Coal	31 to 32 inches

In S. E. ¼ of S. E. ¼ of S. 1, T. 21, R. 9 W.

Coal streak.	
Shale, sandstone, about	36 inches
Coal reported	12 inches
Shale, some	48 inches
Coal, shale	6 inches
Shale	10 inches
Coal	18 inches

(OVER)

Shale	1 inch
Coal	4 inches
Shale	1 to 2 inches
Coal	7 to 8 inches

In N. E. ¼ of S. W. ¼ of S. 1, T. 21, R. 9 W.

Coal	6 inches
Shale	9 to 10 inches
Coal	10 inches
Shale	½ inch
Coal	5 inches

This may not be the full thickness of the seam.

In N. W. ¼ of N. W. ¼ of S. 1, T. 21, R. 9 W.

Coal	5 to 6 inches
Shale	6 inches
Coal	1 to 2 inches
Shale	1 to 2 inches
Coal, shale	12 inches
Coal	7 to 8 inches
Shale	15 inches
Coal	10 inches
Shale	¾ inch
Coal	7 inches

In N. E. ¼ of N. E. ¼ of S. 2, T. 21, R. 9 W.

Coal	9 to 10 inches
Shale	½ inch
Coal	1 to 2 inches
Shale	½ inch
Coal	4 to 5 inches
Shale	6 to 7 inches
Coal	10 to 11 inches
Shale	4 inches
Coal	14 to 15 inches

Reported section in Mines in N. E. ¼ of N. E. ¼ of S. 2, T. 21, R. 9 W.

Coal	11 inches
Shale	3 inches
Coal	8 inches
Shale	5 inches
Coal	12 inches
Shale	4 inches
Coal	14 inches

In old drift in N. E. ¼ of N. E. ¼ of S. 2, T. 21, R. 9 W.

Coal	0 to 2 inches
Shale	0 to 1 inch
Coal	8 to 10 inches
Shale	¾ to 1 inch
Coal	1 to 4 inches
Shale	2 inches
Coal	2 to 4 inches
Shale	7 to 12 inches
Coal	9 to 12 inches
Shale	3 to 6 inches
Coal	9 to 15 inches

In S. E. ¼ of N. E. ¼ of S. 2, T. 21, R. 9 W.

Coal	30 inches

This may not be full thicknesss of seam and it may have some partings.

In S. E. ¼ of S. W. ¼ of S. 6, T. 21, R. 8 W.

Coal smut	7 to 8 inches
Shale	9 to 10 inches
Coal smut	33 to 34 inches

Reported outcrop in N. W. ¼ of S. E. ¼ of S. 6, T. 21, R. 8 W.

Coal	12 to 13 inches
Shale	2 inches
Coal	14 inches
Shale	1 inch
Coal	12 inches

In S. ½ of N. W. ¼ of S. 4, T. 21, R. 8 W.

Coal	12 to 14 inches
Shale	23 inches
Coal	21 to 22 inches
Shale (black) with *bone coal*	1 to 2 inches
Coal	4 inches
Shale (black) with bone coal	½ inch
Coal	2 inches
Shale (black) with *bone coal*	1 inch
Coal	14 inches
Shale. reported about	9 feet
Coal	9 feet

In S. W. ¼ of N. W. ¼ of S. 4, T. 21, R. 8 W.

Coal	11 inches
Shale	13 to 14 inches
Coal	42 inches

Fig. 50

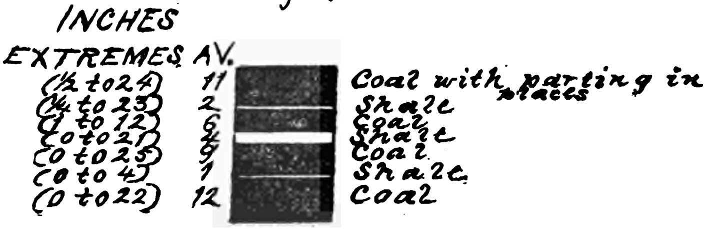

FIG. 50. *Average Section of the* Brookwood Coal Seam *to the west of the Black Warrior River.*

At old drifts in S. E. ¼ of S. W. ¼ of S. 35, T. 20, R. 9 W.

Coal	7 to 8 inches
Rash, shale	¼ to 2 inches
Coal	1 to 2 inches
Shale, clayey, black	¼ to ½ inch
Coal	2 to 4 inches
Shale	1 to 3 inches
Coal	9 to 10 inches

Reported section in Mines in S. W. ¼ of S. E. ¼ of S. 35, T. 20, R. 9 W.

Coal	11 inches
Shale	1 inch
Coal	12 inches
Shale	9 inches
Coal	18 inches

In S. W. ¼ of N. E. ¼ of S. 35, T. 20, R. 9 W.

Coal, with several thin shale partings	9 to 15 inches
Shale	4 inches
Coal	9 to 10 inches
Shale	2 to 4 inches
Coal	10 to 12 inches
Shale	1 to 3 inches
Coal	2 to 4 inches
Shale, sandstone, about	11 feet
Coal, (Milldale Seam), probably	8 to 12 inches

About 7 feet below surface, in reported bore-hole in N. E. ¼ of S. W. ¼ of S. 36, T. 20, R. 9 W.

Coal	10 inches
Shale	3 to 4 inches
Coal	3 inches
Shale	3 to 4 inches
Coal	25 inches
Shale	3 inches
Coal	2 to 3 inches
Shale	½ inch
Coal	8 inches

In N. W. ¼ of S. W. ¼ of S. 36, T. 20, R. 9 W.

Coal	9 inches
Shale	2 to 3 inches
Coal	2 to 3 inches
Shale	3 to 4 inches
Coal	10 inches
Shale	4 inches
Coal	12 inches
Shale	2 inches
Coal	4 inches

In N. E. ¼ of S. 25, T. 20, R. 9 W.

Coal smut	19 to 20 inches
Shale	1 to 2 inches
Coal smut	1 inch

In S. 12, T. 20, R. 9 W.

Coal smut	19 to 20 inches
Shale	3 inches
Coal smut	2 to 3 inches
Shale	½ inch
Coal smut	4 to 5 inches

In N. E. ¼ of S. 12, T. 19, R. 9 W.

Coal smut	13 inches
Shale	5 inches
Coal smut	2 to 3 inches
Shale	1 to 2 inches
Coal smut	4 to 5 inches
Shale	¾ inch
Coal smut	5 to 6 inches

In S. E. ¼ of S. 1, T. 19, R. 9 W.

Coal smut	2 inches
Shale	¼ inch
Coal smut	11 to 12 inches
Shale	5 inches
Coal smut	18 inches

In S. E. ¼ of N. W. ¼ of S. 1, T. 19, R. 9 W.

Coal smut	7 inches
Shale	2 to 3 inches
Coal smut	3 inches

The outcrops under the divide south of Blue Creek are thin.

In S. W. ¼ of N. W. ¼ of S. 16, T. 19, R. 9 W.

Coal	6 to 7 inches
Mother of coal	½ inch
Coal	8 to 9 inches
Shale	4 inches
Coal	5 to 6 inches
Shale	1 to 2 inches
Coal	5 inches

In N. W. ¼ of S. E. ¼ of S. 23, T. 20, R. 9 W.

Coal smut	½ inch
Shale	3 inches
Coal smut	1 inch

(OVER)

Shale	21 inches
Coal smut	1 inch
Shale	3 to 4 inches
Coal smut	1 inch
Shale	1 to 2 inches
Coal smut	2 inches
Shale	4 inches
Coal smut	1 to 2 inches
Shale	8 to 9 inches
Coal smut	1 to 2 inches

In N. W. ¼ of N. W. ¼ of S. 35, T. 20, R. 9 W.

Coal	2 to 3 inches
Shale	2 to 3 inches
Coal	9 to 10 inches
Shale	2 to 3 inches
Coal	10 to 11 inches
Shale	¾ inches
Coal	8 inches

At old coal beds in S.'s 22, 26 and 27, T. 20, R. 9 W.

Coal, bony on top	21 to 24 inches
Shale	2 to 4 inches
Coal	3 to 5 inches
Shale	1 to 2 inches
Coal	3 to 4 inches

Outcropping in N. E. ¼ of S. 13, T. 21, R. 10 W., back of Insane Hospital, near Tuscaloosa

Coal with streaks of shale	12 inches
Shale, blue, clayey, with streaks of coal	10 to 12 incches
Coal	2 inches
Shale, blue, clayey, with streaks of *coal*	26 to 27 inches
Coal, shaly	3 ot 4 inches

Outcropping in S. W. ¼ S. 15, T. 21, R. 10 W., on north side of Warrior River between Tuscaloosa and Northport.

Coal and shale in alternate thin seams	12 to 18 inches

In reported shaft a short distance to north-west of last outcropping in S. W. ¼ of S. 15, T. 21, R. 10 W.

Coal	10 inches
Shale	8 inches
Coal	6 inches
Shale	4 to 5 inches
Coal	24 inches

The coal of this shaft doubtless carries shaly streaks.

In reported boring in N. E. ¼ of N. E. ¼ of S. 26, T. 21, R. 10 W., near Tuscaloosa.

Coal	3 inches

The Guide Coal Seam.

This coal seam is not of workable thickness. Its thickest outcrops, cut up by shale partings, do not usually carry over 15 inches of coal. The average thickness of its coal is near 6 inches.

OUTCROPS OF THE GUIDE COAL SEAM.

Outcrop in S. E. ¼ of N. E. ¼ of S. 36, T. 21, R. 8 W.

Coal smut	6 inches
Shale	1 to 2 inches
Coal	1 inch
Shale	1 inch
Coal	½ inch
Shale with *coal streaks*	15 to 16 inches

Reported outcrop in S. 29, T. 20, R. 7 W.

Coal	9 inches
Shale	8 inches
Coal	16 inches
Shale	2½ inches
Coal	4 inches

In N. W. ¼ of N. E. ¼ of S. 30, T. 20, R. 7 W.

Coal	5 inches
Shale	1 to 2 inches
Coal	8 inches

In S.'s 36, 35 and 34, T. 20, R. 9 W. and S. 2, T. 21, R. 9 W.

Coal	6 inches

In N. W. ¼ of S. E. ¼ of S. 23, T. 20, R. 9 W.

Coal smut	5 inches
Shale	3 inches
Coal smut	4 to 5 inches
Shale	1 to 2 inches

(OVER)

Coal smut	3 to 4 inches
Shale	1 to 2 inches
Coal smut	1 inches

In N. W. ¼ of N. W. ¼ of S. 35, T. 20, R. 9 W.

Coal smut	7 inches

In reported boring in N. E. ¼ of N. E. ¼ of S. 26, T. 21, R. 10 W.

Shale mixed with *coal*	18 inches

APPENDIX.

REPORTED RECORDS OF DRILLINGS AND SHAFTS.

These drillings are given more to show the distances between the coal seams than the thickness of the coal seams themselves. The coals are all too soft to come out as cores in the borings. The explanations, identifications of the coal seams, etc., are by the author:

Drilling in N. E. ¼ of N. E. ¼ of S. 26, T. 21, R. 10 W., near Tuscaloosa.

	FEET	INCHES	
Sand and gravels (*Lafayette* and *Tuscaloosa* formations)	68	0	
Shales, with a hard gray rock near bottom	143	6	
Shales mixed with *Coal*	1	6	(*Guide Seam.*)
Sandstones, shales	16	0	
Coal, impure		3	(*Brookwood Seam.*)
Clay		9	
Sandstone	9	0	
Coal		4	(*Milldale Seam.*)
Shale, clayey	2	8	
Sandstone	14	0	
Conglomerate	2	6	
Sandstone, gray	8	6	
Conglomerate with *coal*	6	0	(*Johnson Seam.*)
Sandstone, gray	4	6	
Conglomerate		6	
Shale	1	6	
Conglomerate with *coal*	2	6	
Sandstone	17	6	
Shale, blue	10	0	
Sandstone	9	0	
Coal and shale		6	(*Clements Seam.*)

(CONTINUED.)

	FEET	INCHES	
Clay shale	3	0	
Rock, gray and brown, hard	33	0	
Conglomerate	2	0	
Gray rock, sandstone	27	0	
Shale, blue	15	0	
Gray rock	33	0	
Shale	20	6	
Fossiliferous rock	2	6	
Shale, hard	181	6	
Sandstone	29	0	
Shale with some sandstone	30	6	
Coal	2	0	(*Gwin Seam.*)
Sandstone	15	6	
Shale	2	0	
Sandstone	3	6	
Conglomerate	4	0	
Sandstone	19	6	
Shale	6	0	
Coal		4	(*Thompson Mill Seam.*)
Shale	8	8	
Sandstone	40	0	
Shale	6	0	
Sandstone	15	0	
Shale	11	0	
Sandstone with shale	25	0	
Shale	98	0	
Sandstone	5	0	
Shale	1	0	
Coal		4	(*Cobb Upper Seam.*)
Clay shale	6	8	
Sandstone	12	0	
Shale	11	0	

(CONTINUED.)

	FEET	INCHES	
Coal	2	3	(*Cobb Lower Seam.*)
Shale		9	
Sandstone	8	0	
Total	1010	0	

Taken from records of Tuscaloosa Coal, Iron and Land Company.

The identity of the coal seams in the above drilling may possibly be wrong, the drilling being fully a mile from the nearest visible Coal Measures, to the south-east of them.

Drilling about in S. E. ¼ of S. 5, T. 21, R. 9 W.

	FEET	INCHES	
Clay	3	0	
Sand and gravels	4	0	
Shales	45	0	
Sandstone	20	0	
Shale	8	0	
Coal		4	(*Gwin Seam.*)
Shale	12	8	
Sandstone	5	0	
Shale	9	6	
Coal		10	
Clay shale	2	8	
Sandstone	27	0	

(CONTINUED.)

	FEET	INCHES	
Shale	3	0	
Sandstone	30	0	
Shale	6	0	
Coal and shale	1	11	(*Thompson Mill Seam.*)
Clay shale	3	1	
Grey stone	34	6	
Shale	1	0	
Coal		6	
Shale		7	
Coal		5	
Shale		7	
Coal, impure		5	
Shale	9	0	
Coal and shale		9	
Clay shale		3	
Grey stone	9	0	
Shale	2	0	
Grey and brown stones	26	0	
Shales	22	6	
Brown stone	5	6	
Shales	176	0	
Sandstones with shales	11	0	
Shales with sandstones	23	0	
Coal and shale	1	5	(*Cobb Upper Seam.*)
Bituminous shale	1	1	
Shale	9	6	
Sandstone	13	0	
Shale	11	6	
Sandstone with little shale at bottom	14	6	
Coal		10	(*Cobb Lower Seam.*)
Shale	1	2	
Sandstone with shale	3	0	

(CONTINUED.)

	FEET	INCHES	
Shales, uppe rpart fossiliferous	31	0	
Grey and brown stones	4	0	
Shales	22	0	

Taken from records of Tuscaloosa Coal, Iron and Land Company.

The *greystone* must be a sandstone.

Section (partly a boring) in S. E. ¼ of N. E. ¼ of S. 35, T. 20, R. 9 W.

	FEET	INCHES	
Coal		6 to 9	(*Guide Seam.*)
Shale, about	20	0	
Coal, with several streaks of shale	1	4	(*Brookwood Seam.*)
Shale		4	
Coal		9	
Shale, a *bony coal* in places		2 to 3	
Coal	1	0	
Shale		1 to 2	
Coal		2	
Shales	15	0	
Coal	1	0	(*Milldale Seam.*)
Conglomerates, sandstones, shales	30	0	
Coal	1	3	(*Johnson Seam.*)
Sandstones, conglomerates, shales	16	0	
Coal	1	8	(*Clements Seam.*)

The portion of this last section below the Brookwood Seam is of a boring by Maj. W. J. Kelley. The Brookwood and Milldale seams in a short distance up the river, to the east, come together into one seam.

Drilling in N. W. ¼ of N. E. ¼ of S. 34, T. 20, R. 9 W.

	FEET	INCHES	
Sandstone	25	0	
Clay, red		4	
Clayey shale		6	
Conglomerate	9	2	
Grey rock	9	0	
Shale	6	0	
Grey stone	2	0	
Sandstone	5	0	
Clayey shale	1	0	
Shale, hard	2	0	
Greystone	9	0	
Sandstones, micaceous	20	0	
Shale	20	0	
Sandstone (micaceous) with shale	117	0	
Shale	3	0	
Sandstone	6	0	
Shale	13	0	
Coal		5	(*Gwin Seam.*)
Clayey shale	5	7	
Shale	15	0	
Coal		11	
Shale	17	1	
Coal		9	
Shale	18	3	
Coal, impure		8	
Shale		4	
Greystone		6	
Clayey shale	1	0	
Shale	1	6	
Greystone	55	0	
Shale	1	0	

Taken from records of Tuscaloosa Coal, Iron and Land Company.

Drilling in S. 30, T. 20, R. 8 W., one-half mile from Warrior River.

	FEET	INCHES	
Rock	14		
Coal	1		(*Thompson Mill Seam.*)
Shale	30		
Coal	1	½	

Drilling in S. 4, T. 20, R. 8 W., on Bluff Creek.

	FEET	INCHES	
Rock	59		
Coal		8	(*Thompson Mill Seam.*)
Shale	10		
Coal		6	

Drilling in S. 33, T. 18, R. 8 W., at the foot of the Squaw Shoals.

	FEET	INCHES	
Rock	22		
Shale		6	
Coal	1		(*Thompson Mill Seam.*)
Shale	1	6	
Rock	47		
Shale	4	6	
Coal		6	
Shale	2		
Rock	58		
Shale, hard	48		

Drilling in S. W. ¼ of N. W. ¼ of S. 2, T. 21, R. 8 W.

	FEET	INCHES	
Coal	2	6	(*Johnson Seam.*)
Rock	15		
Coal	1	2	
Rock	27		
Coal		6	
Shale	5		(*Clements Seam.*)
Rock	21		
Coal	1	6	
Rock	30		

The last four drillings were reported by F. W. Monish.

Drilling on west boundary of N. W. ¼ of S. 35, T. 21, R. 8 W.

	FEET	INCHES	
Coal, clean	1	0	(*Johnson, etc., Coal Seam.*)
Clay	2	0	
Coal	1	2	
Clay	2	0	
Sandstone, soft	2	0	
Slate, black	7	0	
Coal		4	
Shale, sandy and black	8	0	
Coal		5	
Slate		2	
Coal		5	
Sandstone, fine	6	2	

(CONTINUED.)

	FEET	INCHES	
Clay, black	3	0	
Conglomerate, black pebbles	26	0	
Shale, with *coal*	2	4	
Clay, black	2	11	(*Clements, etc., Coal Seam.*)
Coal, dirty		6	
Clay, black	3	6	
Sandstone, fine grain	7	0	
Sandstone, coarse with *clay pebbles*	31	0	
Shale, black	1	0	
Sandstone, fine grain	2	0	
Shale, black	3	0	
Sandstone, fine	4	8	
Shale, black	5	11	
Coal and shale		7	
Shale	1	6	
Coal		4	
Sandstone, fine grain to bottom of hole	1	6	

Reported by Mr. W. A. Koeppel.

Shaft in S. W. corner of N. W. ¼ of N. E. ¼ of S. 1, T. 22, R. 8 W.

	FEET	INCHES	
Soil	30	0	
Quicksand with *coal*	11—18	0	
Sandstone, soft, laminated	15	0	
Coal ......1 foot to	1	6	(*Milldale Seam.*)
Conglomerate, massive, full of pebbles	39	0	

(CONTINUED.)

	FEET	INCHES	
Shale	13—18	0	
Coal		6—8	(*Johnson, etc., Coal Seam.*)
Shale, clayey		4—5	
Coal, about 10 inches to	1	1	
Shale, hard, sandy	2—3		
Conglomerate, full of pebbles	49	0	
Clay	1	6	
Coal, about		4—10	(*Clements, etc., Coal Seam.*)
Sandstone, fine grain, laminated	10—13	0	
Rash, (*coal* and shale)		4—5	
Shale, blue N	8—10	0	
Rash, (*coal* and shale)		0—3	
Clay 1 foot 8 inches to	2	6	
Rash, (*Coal* and shale)		3—4	
Coal 2 feet 8 inches to	2	9	
Sandstone			

Reported by Wm. Gould. The coal in the quick-sand under the surface soil would be of the *Brookwood Seam*. Mr. Gould says that under the sandstone at the bottom of the shaft is a thick body of shale and that a hole bored in the bottom of the shaft 140 feet deep showed only two thin streaks of coal.

Drilling in S. E. ¼ of N. E. ¼ of S. 1, T. 22, R. 8 W.

	FEET	INCHES	
Soil and gravel	4	0	
Sandstone, friable	9	0	
Sandstone, fine grain	7	2	
Conglomerate	13	0	
Coal, clean		6—7	(*Clements, etc., Coal Seam.*)
Clay		2	
Coal		10	
Sandstone, shaly	2	0	
Clay and shale	4	0	
Coal, dirty		3—4	
Clay and shale	4	0	
Shale ....Sandstone, shaly	6	0	
Shale, black		10	
Coal, dirty		3	
Coal, clean	2	5	
Clay	2	6	
Sandstone, fine grit, gray	13	8	
Shale, black	1	0	
Coal		1	
Shale, black	4	3	
Coal		4—5	
Shale		1	
Sandstone, gray	20	0	
Sandstone, shaly	2	7	
Sandstone, gray	4	0	
Shale	4	0	
Sandstone, shaly	5	6	
Shale	24	10	

Reported by Mr. W. A. Koeppel.

Drilling at Sulphur Spring Church, seven miles west of Birmingham.

	FEET	INCHES	
Surface soil	2	0	
Clay	3		
Sandstone, gray, micaceous, hard, fossils	16		
Aranaceous clay, fracture vertical	3	4	
Coal, soft		3	(*Frierson Seam.*)
Sandstone, verticle fracture, pyrites	6		
Dark *limestone,* vertical fracture, seams of spar, pyrites	8		
Dark clay	25		
Clay or soapstone, pyrites	47		
Sandstone, traces of lime (bastard)	2		
Bastard limestone	1		
Gray sandstone, hard, micaceous	2		
Gray sandstone, *coal seams* through it	1		
Clay, pyrites, fracture vertical	3		
Hard dark limestone	7		
Hard sandstone, micaceous	4		
Clay or soapstone, fossils	5	5	
Coal, good	4	6	(*Pratt Seam.*)
Fire clay	3	6	
Gray sandstone, hard, micaceous	9	3	
Arenaceous clay	9	6	
Coal, good	1	4	(*Cardiff Seam.*)
Fire clay	1	6	
Clay, fossils	8	0	
Black limestone, very hard, bastard	2	0	
Clay, fossils	17	3	

(CONTINUED.)

	FEET	INCHES	
Coal, and drillings of the coal	2	0	(*American Seam.*)
Slate clay	3	3	
Clay or mud, *seams of coal* through it	3		
Arenaceous clay, fossils	1		
Coal, and drillings	1	8	
Clay, fossils	1	9	
Coal, and drillings, good	3	6	
Clay	2		
Coarse gray sandstone, fossils	23		
Coal, sulphur balls	1	4	(*Curry Seam.*)
Arenaceous clay, coal plants	3	6	
Clay or soapstone	1	0	
Dark hard sandstone, micaceous	3	0	
Arenaceous clay	2		
Clay, coal plants	3		
Dark arenaceous clay	28		
Coarse gray sandstone, hard, micaceous	6		
Arenaceous clay	17	8	
Clay, fossil plants, etc	2		
Coal	3	4	(*Gillespie Seam.*)
Arenaceous clay	1		
Coarse gray sandstone	3	5	
Coal, mixed with clay	1	8	
Arenaceous clay, seams of hard black slate	8	0	
Coarse gray sandstone, *seams of coal*	7	0	
Dark sandstone, fine, coal plants	4	0	
Coal	1		
Clay, coal plants	2		
Sandstone,, micaceous	3		
Clay	20		
Coarse gray sandstone	6		
Slate clay	13		
Coal, with seams of slate and sulphur		10	

(CONTINUED.)

	FEET	INCHES	
Clay, coal plants	2		
Coarse gray sandstone, micaceous	9		
Conglomerate	6	8	
Arenaceous clay, fracture vertical	6		
Dark gray *limestone*	4		
Park sandstone, shells	20		
Arenaceous clay	10		
Dark *limestone*, shells	3		
Clay, with seams of sandstone (broken)	15	4	
Dark gray sandstone, micaceous, hard	40	2	
Dark sandstone, fossil plants	12	0	
Dark *limestone*, hard	4	0	
Arenaceous clay	30	5	

Taken from the Geological Report for 1876. This boring shows the Gillespie Seam to be divided up into four separate coal seams through about seventy-five feet of strata. Two of these seams are thicker than any known outcrops of the Gillespie Seam.

Drilling on Head of Camp Branch in S. 34, T. 17, R. 4 W.

	FEET	INCHES	
Coal		10	(*Cobb Upper Seam.*)
Clay, hard		9	
Coal		4	
Clay and shale	3	0	
Coal		8	
Shale	2	9	
Sandstone	26	0	

(CONTINUED.)

	FEET	INCHES	
Coal		1	(*Cobb Lower Seam.*)
Shales, sandstones	295	0	
Coal	4	6	(*Pratt Coal Seam.*)

Reported by Erskine Ramsey, C. E., Consulting Engineer Tenn. Coal, Iron and Railway Company. The above record does not show the *Frierson Seam,* or the parting in the *Pratt Seam.*

Drilling on Camp Branch, ten miles west of Birmingham.

	FEET	INCHES	
Soil	4	0	
Sandstone, yellow	3	0	
Clay	6	4	
Clay, arenaceous	5	0	
Coal		10	(*Cobb Upper Seam.*)
Clay		6	
Coal		4	
Clay light	4	0	
Sandstone	55	10	
Clay	1	0	(*Place for Cobb Lower Seam.*)
Sandstone	6	0	
Clay, arenaceous	4	0	
Clay	4	0	
Clay, arenaceous	6	0	
Sandstone, hard, gray	2	0	
Clay	3	0	
Clay, arenaceous	5	3	
Sandstone	10	8	

(CONTINUED.)

	FEET	INCHES	
Clay, arenaceous	4	0	
Clay with seams of *coal*	3	0	(*Frierson Seam.*)
Clay	2	0	
Sandstone, shales	233	1	
Coal	6	0	(*Pratt Seam.*)
Clay	3	0	
Sandstone	38	4	
Clay, arenaceous	4	0	
Clay and mud	5	0	(*Place for Cardiff Seam.*)
Clay	35	0	
Sandstone	10	0	
Coal, giving gas	2	0	(*American Seam.*)
Sandstone	44	0	
Clay, arenaceous	4	0	
Clay	8	0	
Coal, hard, gloosy	4	0	(*Curry Seam.*)
Clay	2	0	
Clay	4	0	
Sandstone, micaceous	9	0	
Shale	3	0	
Sandstone	4	0	
Conglomerate, soft	2	0	
Sandstone with *coal* seam	4	0	

Taken from Report of Geological Survey for 1876. Most of what is termed clay in the above section is doubtless an argillaceous shale. The *Curry Seam* has not been seen where it was as thick as shown in this boring; the *Pratt Seam* is shown to be unusually thick; and the *American Seam* has only one bench.

Dhilling in E. ½ of N. E. ¼ of S. 35, T. 17, R. 4 W.

	FEET	INCHES	
Shales, sandstones	15	7	
Coal		3	(*Cobb Lower Seam.*)
Shales, sandstones	293	0	
Coal		8	(*Pratt Seam.*)
Shale		2	
Coal	3	6	
Shale	1	0	
Coal		4	
Shale	5	9	
Sandstone	4	9	
Shale	9	8	
Coal	1	3	(*Cardiff, etc., Seam.*)
Shale	21	11	
Coal	1	4	(*American Seam.*)
Shale		7	
Coal		2	
Shale	4	7	
Coal	1	7	
Shale	2	4	
Coal		5	
Shale		½	
Coal	1	3½	
Shale		5	
Coal		1	
Shale		1	
Coal		8	
Sandstone	5	10	

Reported by Erskine Ramsey, Consulting Engineer Tennessee Coal, Iron and Railway Company. The ***Frierson, etc., Coal Seam*** is wanting in this boring.

Drilling about one mile south of Coalburg.

	FEET	INCHES	
Measures	133	6	
Coal		6	(*Pratt Seam.*)
Shale		2	
Coal	3	6	
Shale		8	
Coal		6	
Measures	23	9	
Coal	1	3	(*Cardiff Seam.*
Measures	38	7	
Coal		2	(*American Seam.*)
Shale	2	11	
Coal	1	10	
Shale	2	6	
Coal		3	
Shale		8	
Coal	1	0	

Reported by Erskine Ramsey, Consulting Engineer, Tennessee Coal, Iron and Railway Company.

Drilling in N. W. ¼ of S. W. ¼ of S. 17, T. 16, R. 2 W.

	FEET	INCHES	
Sandstone	28	6	
Coal		1	(*Mary Lee Seam.*)
Sandstone	2	5	
Shale	4	8	
Coal	1	5½	
Shale		3½	
Coal, dirty		3½	
Coal, clean		4	
Clay		3	
Coal		½	
Clay		1½	
Coal		1	
Clay	1	6	
Shale	11	6	
Coal, dirty		6	
Clay, black, bituminous	1	0	
Shale	10	0	
Clay, black, bituminous	2	0	
Sandstone with shale streaks	5	0	
Sandstone, hard	3	0	
Shale, black with bands of ironstone	2	0	(*Blue Creek Seam.*)
Shale with sandstone streaks	23	0	
Coal, mixed with shale	1	2	(*Jagger, etc., Seam.*)
Coal, dirty	2	7	
Shale	9	3	
Sandstsone with shale	3	0	
Couglomerate	28	6	

(CONTINUED.)

	FEET	INCHES	
Coal		2	(*Ream Seam.*)
Clay, hard	3	4	
Shale, sandy	4	0	
Sandstone, coarse grit, gray	12	0	
Shale, black, bituminous		6	
Sandstone, fine, dark gray	4	0	
Shale, black, bituminous		6	
Coal		8	
Clay	4	0	
Sandstone, micaceous, fine grit	17	0	
Sandstone, coarse grit	4	0	
Sandstone, full of *coal streaks*	2	0	
Clay, soft	1	6	
Coal		2	
Clay, soft		2	
Shale with sandstone streaks	40	0	
Sandstone	3	6	
Shale with sandstone streaks	23	0	
Coal		9½	(*Lick Creek Seam.*)
Clay, soft		2½	
Clay, hard	1	0	
Shale	1	0	
Sandstone, micaceous	24	0	

(CONTINUED.)

	FEET	INCHES	
Coal		2	(*Jefferson Seam.*)
Shale	5	2	
Coal		8	
Clay, soft	2	7	
Shale, black with trace of *coal*		9	
Light sandy material		3	
Shale, dark brown, full of *coal*		5	
Shale and clay	4	0	
Coal		6	
Shale		1	
Coal		3	
Shale		½	
Coal		1½	
Clay, soft		4	
Coal		8	
Shale	21	8	
(***Murphy Seam***) *Coal*, clean	1	5	
Clay	3	10	
Coal		10	
Clay	4	0	
Sandstone, blue, very hard	6	0	
Sandstone, calcareous	1	0	
Sandstone, streaked	7	0	
Shale, sandy	3	0	
Shale with yellow bands of ironstone	12	0	
Shale with fossil plants	2	0	
Coal	2	7	(*Black Creek Seam.*)

(CONTINUED.)

	FEET	INCHES	
Clay	2	7	
Sandstone, micaceous	5	0	
Shale	1	0	
Sandstone, micaceous	4	0	

Reported by Mr. W. H. Milner, Superintendent and Treasurer of Milner Coal and Railroad Company. In the above boring, the *Jefferson Seam* is split up into *five* different seams. The lower two of these splits make the *Murphy Seam*.

Drilling near New Castle.

	FEET	
Coal	2.3	(*New Castle Seam.*)
Shale	.3	
Coal	.3	
Shale	.1	
Coal	2.7	
Shale	10.5	
Sandstone	36.1	
Coal	1.4	(*Mary Lee Seam.*)
Sandstone and shale	60.0	
Coal	2.0	(*Blue Creek Seam.*)
Shale	4.6	
Coal, shale	4.9	(*Jagger Seam.*)
Shale	15.4	
Couglomerate	16.0	
Coal	1.6	(*Ream Seam.*)
Sandstone and shale	81.0	

(CONTINUED.)

	FEET	
Coal	1.6	(*Lick Creek Seam.*)
Shale and sandstone	39.0	
Coal	1.1	(*Jefferson Seam.*)
Shale	3.0	
Coal	2.0	
Sandstone and shale	29.9	
Coal	2.8	(*Black Creek Seam.*)

Reporter: The late Jno. T. Milner, President Milner Coal and Railroad Company. This boring is very different from the last one though it too is said to be near New Castle.

Drilling at Warrior.

Soil	20	0	
Sandstone, micaceous	46	6	
Clay (probably argillaceous shale)	33	6	
Coal	1	2	(*Lick Creek Seam.*)
Clay, dark	30	0	
Cannel coal and black band	2	4	(*Jefferson Seam.*)
Coal	3	4	
Clay	4	0	
Clay, arenaceous	16	0	
Coal (*Murphy Seam*)	1	8	
Clay	1	6	
Sandstone, micaceous	3	0	
Shale with coal plants	3	0	
Coal, hard	2	2	(*Black Creek Seam.*)
Clay	6	10	
Sandstone clay	114	8	

(CONTINUED.)

	FEET	INCHES	
Limestone, bituminous, hard, gray	10	0	
Clay (probably argillaceous shale)	54	0	
Sandstone with *coal seams*	6	0	
Sandstone, clay	104	0	
Coal, hard and bright	1	6	
Clay	1	0	
Sandstone, shale	16	0	
Coal	1	4	
Clay, doubtless mostly shales	12	0	
Coal	2	6	(*Berry Mountain Seam.*)
Clay	2	0	
Sandstone, shale, clay	100	7	

Taken from the State Geological Report for 1875. The above boring shows the *black band ore* at the top of the Jefferson Coal Seam, it is usually at the bottom.

Shaft and Drilling at Warrior.

	FEET	INCHES	
Shales, sandstones	144	0	
Coal (it has partings on outcrop	2	0	(*Lick Creek Seam.*)
Shale	18	0	
Coal	1	0	(*Jefferson Seam.*)
Shale	16	0	
Coal (*Murphy Seam*)	2	4	
Clay	4	0	

(CONTINUED.)

	FEET	INCHES	
Sandstone	16	0	
Coal	2	4	(*Black Creek Seam.*)

Reported by Mr. James T. Pierce.

The drilling was in the bottom of the shaft which extended merely down to the *Murphy Seam.* This record is quite different from that of the preceeding boring which is said to be only about one fourth of a mile to the north-west.

Shaft at Jefferson Old Mines, in N. W. ¼ of S. 36, T. 14, R. 3 W.

	FEET	INCHES	
Coal, full of shale	4	9	(*Jagger, etc., Seam.*)
Shales, sandstone	21	1	
Couglomerate	16	0	
Shale	1	0	
Coal, shaly	1	6	(*Ream Seam.*)
Sandstone, shales	81	0	
Coal, clay parting near center	1	6	(*Lick Creek Seam.*)
Shales, sandstones	40	6	
Coal, with two partings	3	3	(*Jefferson Seam.*)
Clay	2	0	
Shales, sandstones	29	5	
Coal, variable	2	6	(*Black Creek Seam.*)
Clay	4	0	

Drilling at Morris Station.

	FEET	INCHES	
Soil	5	0	
Sandstone, clay	28	0	
Coal		8	(*Mary Lee Seam.*)
Sandstone	30	0	
Sandstone with clay seams and some coal	17	0	
Sandstone	12	0	
Coal	2	0	(*Blue Creek Seam.*)
Clay	1	0	
Clay (argillaceous shale)	8	6	
Coal	4	9	(*Jagger, etc., Seam.*)
Clay	1	4	
Conglomerate, shale	35	9	
Coal, mixed withk shale	1	6	(*Ream Seam.*)
Sandstone, clay	15	0	
Sandstone with *coal seam*	3	0	
Sandstone clay, shale	68	10	
Coal	1	6	(*Lick Creek Seam.*)
Clay	3	0	
Sandstone	35	0	
Coal, very good	4	5	(*Jefferson Seam.*)
Clay	3	0	
Sandstone, shale	26	8	
Coal	2	6	(*Black Creek Seam.*)
Clay	3	0	
Sandstone, clay	43	6	
Limestone, buff, very hard	3	0	
Sandstone, shale	4	0	
Sandstone, with trace of *lime*	8	0	
Limestone, dark, with fossil shells	4	0	
Sandstone, shale	17	0	
Sandstones, shales	31	0	

Taken from State Geological Report for 1875.

Drilling between Blossburg and Adamsville.

	FEET	INCHES	
Measures	45	2	
Coal		1	
Shale		1	(*Frierson Seam.*)
Coal		1	
Measures	204	0	
Coal, with two partings	3	0	
Shale	10	8	(*Pratt Seam.*)
Coal	1	0	
Measures	14	3	
Coal	1	2	(*Cardiff, etc., Seam.*)
Measures	38	10	
Coal	1	6	
Shale		4	(*American Seam.*)
Coal		4	
Sandstone	7	2	

Reported by Mr. Erskine Ramsey, C. E., Consulting Engineer Tennessee Coal, Iron and Railway Company.

Drilling in N. W. ¼ of N. W. ¼ of S. 30, T. 16, R. 4 W.

	FEET	INCHES
Soil	7	0
Sandstones, shales	316	0
Coal signs in strata	15	0
Sandstones, shales	79	6

(CONTINUED.)

	FEET	INCHES	
Coal, with a 3½ inch parting	4	2	(*Horse Creek, etc., Seam.*)
Shale	1	4	
Coal, with a 2 inch parting	3	5	
Shale, sandstone, clay	20	8	
Coal	1	0	(*Blue Creek Seam.*)
Shale, clay	14	0	

Reported by Mr. J. B. Carrington.

Drilling in S. 28,, T. 17, R. 6 W.

	FEET	INCHES	
Sandstone, shale	11	8	
Coal	1	5	(*American Seam.*)
Sandstone, shales	118	3	
Coal		8½	(*Curry Seam.*)
Shales, sandstones	26	3½	
Coal		9	(*Gillespie Seam.*)
Shales, with seams, from 2 inches to 3 feet thick, of impure *limestone* near the middle	316	10½	
Coal	2	2	(*Horse Creek, etc., Seam.*)
Shale		5½	
Coal		9	
Shale	1	2	
Coal, clean	2	2	
Shale	1	9	
Coal	1	8	

(CONTINUED.)

	FEET	INCHES	
Shale, sandstone, clay	21	6½	
Coal, very clean	2	4	(*Blue Creek Seam.*)
Shale, to bottom of drilling	1	6	

Reported by Maj. E. M. Tutwiler.

This boring fails to show the New Castle (Guide) Seam.

Drilling in N. E. ¼ of S. E. ¼ of S. 16, T. 15, R. 6 W.

	FEET	INCHES	
Sandstone; shale	11	9	
Coal		6	(*New Castle.*)
Shale, sandstone	36	4	
Coal	2	7	(*Horse Creek.*)
Shale		½	
Coal		1½	
Shales, sandstone	159	3	
Coal		2	(*Blue Creek.*)
Shale and *coal*, mixed		8	
Shale	5	9	
Coal		3	
Shale	5	7	
Coal		3	(*Jagger.*)
Shale, sandstone	65	11	

Reported by Col. B. M. Long. It appears from this boring that the strata between the Horse Creek and Blue Creek seams have thickened up very much.

Drilling in N. E. corner of S. W. ¼ of S. 9, T. 15, R. 6 W.

	FEET	INCHES	
Shale	63	2	
Coal		6	(*Blue Creek.*)
Shale	7	6	
Coal		4	
Shale	8	2	
Coal		4½	(*Jagger.*)
Shale, Sandstone	68	0	
Coal		5	(*Ream.*)
Shale	44	11	
Coal		1½	(*Lick Creek.*)
Shale	15	1	
Coal		1	(*Jefferson Seam.*)
Shale	1	9	
Coal	8	1½	
Shale	14	10	
Coal		9	
Shale, sandstone	68	8	

Reported by Col. B. M. Long.

Drilling in S. E. ¼ of N. W. ¼ of S. 11, T. 14, R. 7 W.

	FEET	INCHES	
Shale	25	0	
Coal		6	(*Blue Creek.*)

CONTINUED.

	FEET	INCHES	
Clay	1	0	
Sandstone, shale	57	0	
Coal, rotten	2	6	(*Jagger.*)
Sandstone	2	0	

Reported by Mr. J. B. Carrington.

Drilling at Jasper, Walker county.

	FEET	INCHES	
Soil	7	11	
Sandstone, shale	91	6¾	
Sandstone with *coal* streaks	9	6	(*Ream.*)
Sandstone, shale	38	10¼	
Coal	1	9	(*Jefferson.*)
Sandstone, shale	65	1	
Sandstone with *coal streaks*	40	10½	(*Black Creek.*)
Sandstone, shales	90	5½	

Reported by Mr. J. B. Carrington.

The above section shows that the strata between the Horse Creek and Black Creek groups have become much thinner, and that those between the Lick Creek Seam and Jefferson Seam have died out entirely, as also the Lick Creek Seam itself.

Drilling in S. W. ¼ of N. E. ¼ of S. 20, T. 14, R. 7 W.

	FEET	INCHES	
Shale sandstone	30	0	
Coal		3	(*Blue Creek.*)
Shale, blue	12	6	
Coal		5	
Shale, blue	11	6	
Coal		10	(*Jagger.*)
Clay	1	6	
Sandstone, shale	38	0	

Reported by Mr. J. B. Carrington.

Drilling in S. 25, T. 15, R. 9 W.

	FEET	INCHES	
Soil	5	0	
Shale	29	4	
Coal (*Pratt*)	1	11	(*Corona*)
Clay, black, sandy	2	0	
Sandstone, shales	17	7	
Coal (*Cardiff Seam*)	1	7	
Clay, shale	6	8	

Reported by W. E. Leake, Vice Pres. Va. and Ala. Coal Co.

Drilling at Patton, in S. 26, T. 15, R. 9 W.

	FEET	INCHES	
Soil	7	0	
Coal	4	0	*(Corona Seam.)*
Shale	15	0	
Coal		2	*(American Seam.)*
Shale	15		
Coal		2	
Sandstone, shale	52	0	
Coal		5	*(Curry Seam.)*
Sandstone	55	6	
Coal		3	*(Gillespie Seam.)*
Clay	2	1	
Shales, sandstones	234	5	
Coal, with a two inch parting	3	2	*(New Castle Seam.)*
Clay		6	
Shale, sandstone	24	11	
Coal		6	*(Mary Lee Seam.)*
Clay	1	3	
Shale, sandstone, clay	20	3	
Coal	2	4	*(Blue Creek Seam.)*
Shale	12	9	
Coal		2	*(Jagger Seam.)*
Clay	2	9	
Sandstone, shale, clay	68	6	
Coal		2	*(Ream Seam.)*
Clay	1	2	
Sandstone, shale	27	3	
Shale with *coal slips*		6	*(Lick Creek Seam.)*
Sandstone	28	4	
Coal	2	6	*(Jefferson Seam.)*
Sandstone	36	3	

(CONTINUED.)

	FEET	INCHES	
Coal	2	6	(*Black Creek Seam.*)
Clay		5	
Sandstone, shale	20	2	
Sandstone with *coal slips*	4	5	
Shale, sandstone	93	8	

Reported by W. E. Leake, Vice Pres. Va. and Ala. Coal Co.

Drilling at Corona in S. E. ¼ of S. W. ¼ of S. 27, T. 15, R. 9 W.

	FEET	INCHES	
Coal	1	2	(*Corona Seam.*)
Shale		3	
Coal	2	0	
Clay 2 feet to	2	6	
Measures	17	0	
Coal		4	(*American Seam.*)
Measures	8	0	
Coal		3	
Measures	14	0	
Coal		2	
Measures	44	0	(*Curry Seam.*)
Coal		8	

Reported by Maj. W. J. Kelley.

Drilling in S. 32, T. 15, R. 10 W.

	FEET	INCHES	
Shales, sandstones	79	0	
Coal		2	(*Corona.*)
Shale		4	
Coal	1	½	
Clay, shale	5	6½	
Coal		1	
Shale		2	
Coal		1½	
Shale		7	
Coal, clean	1	5	
Clay, shale	1	7	

Reported by W. E. Leake, Vice Pres. Va. and Ala. Coal Co.

Drilling in S. W. ¼ of S. 10 ,T. 14, R. 8 W.

	FEET	INCHES	
Surface	4	0	
Shale, sandstone	19	0	
Coal		1	(*New Castle.*)
Sandstone, shale	16	1	
Coal		6	(*Mary Lee.*)
Sandstone	51	7	
Iron	1	0	(*Blue Creek.*)

(CONTINUED.)

	FEET	INCHES	
Sandstone	14	0	
Coal		7	(***Jagger.***)
Sandstone, shale	102	4	
Shale with thin *coal seams*	2	0	(***Ream.***)
Sandstone	46	10	
Shale with thin *coal seams*	1	0	
Coal	2	0	(***Jefferson.***)
Sandstone	104	4	

Reported by Mr. J. B. Carrington.

Drilling in S. 3, T. 14, R. 8 W.

	FEET	INCHES	
Soil	4	0	
Shale	38	0	
Coal	7	2	(***Horse Creek.***)
Shale, sandstone	64	6	
Coal		6	(***Blue Creek.***)
Shale	14	7	
Coal		10	(***Jagger.***)
Shale	49	8	
Coal		8	(***Ream.***)
Shale, sandstone	88	10	

Reported by Mr. J. B. Carrington.

Drilling in S. E. ¼ of N. W. ¼ of S. 8, T. 14, R. 8 W.

	FEET	INCHES	
Soil	12	0	
Sandstone, shale	25	8	
Coal	2	8	(*Horse Creek Seam.*)
Shale	15	0	
Coal	2	0	(*Blue Creek Seam.*)
Shale		6	
Coal	1	6	
Shale		9	
Coal	1	3	(*Jagger Seam.*)
Clay		9	
Shale, sandstone	13	3	

Reported by Mr. J. B. Carrington.

Drilling near Gamble Mines, Walker County, (near end of Peter Burtons' lane.)

	FEET	INCHES	
Surface soil	2	0	
Shale, sandstone	30	0	
Coal	1	0	(*New Castle Seam.*)
Sandstone	50	0	
Shale, *coaly*	2	4	
Coal	-	4	(*Horse Creek Seam.*)
Parting		10	
Coal	1	6	
Clay	1	4	

Reported by Mr. J. B. Carrington.

Drilling near Gamble Mines, Walker County, (on side of hill above last drilling.)

	FEET	INCHES	
Surface soil	2	0	
Shale, sandstone	25	0	
Coal		6	(*New Castle Seam.*)
Shale	54	6	
Coal	3	6	(*Horse Creek Seam.*)
Parting		10	
Coal		10	

Reported by Mr. J. B. Carrington.

Drilling near Gamble Mines, Walker County, (at head of hollow above school house.)

	FEET	INCHES	
Soil	7	0	
Sandstone	13	0	
Coal		5	(*New Castle Seam.*)
Shale, sandstone	63	1	
Coal	3	0	(*Horse Creek Seam.*)
Parting		7	
Coal	4	2	

Reported by Mr. J. B. Carrington.

Drilling in N. E. ¼ of N. E. ¼ of S. 34, T. 13, R. 8 W.

	FEET	INCHES	
Soil	5	0	
Shale, sandstone	17	6	
Coal	1	6	(*New Castle Seam.*)
Shale		3	
Coal and shaly iron ore	6	0	
Shale, sandstone	42	3	
Coal	3	6	(*Horse Creek Seam.*)
Shale, sandstone	3	6	

Reported by Mr. J. B. Carrington.

Drilling in S. W. ¼ of N. W. ¼ of S. 33, T. 13, R. 8 W.

	FEET	INCHES	
Soil	11	0	
Sandstone	4	0	
Kidney ore, shale	15	0	
Shale	31	0	
Coal		6	(*Blue Creek Seam.*)
Clay and shale	12	0	
Coal	2	4	(*Jagger Seam.*)

Reported by Mr. J. B. Carrington.

Drilling in S. E. ¼ of S. E. ¼ of S. 6, T. 14, R. 8 W.

	FEET	INCHES	
Soil	2	0	
Sandstone, shale	13	8	
Coal		6	(*New Castle Seam.*)
Clay, shale	32	3	
Coal		8	(*Horse Creek Seam.*)
Shale	15	7	
Coal	2	0	(*Blue Creek Seam.*)
Clay, shale	14	4	
Coal	1	3	(*Jagger Seam.*)
Coal, rotten		6	
Coal	2	9	
Coal, rotten		9	
Clay, sandstone	1	10	

Reported by Mr. J. B. Carrington.

Drilling near center of S. 30, T. 13, R. 8 W.

	FEET	INCHES	
Sandstone, shale	55	11½	
Coal		6	(*Ream Seam ?*)
Shale	8	½	
Coal		4	
Clay	2	0	
Shale, sandstone	23	2	
Coal and shale	2	8½	
Shale, sandstone	38	8½	
Coal		10	(*Lick Creek Seam.*)
Shale, sandstone	57	5	

Reported by Mr. J. B. Carrington.

Drilling in N. E. ¼ of S. 25, T. 13, R. 9 W.

	FEET	INCHES	
Soil	10	10½	
Sandstone		6	
Coal		6	(*New Castle Seam.*)
Shale, sandstone	22	7½	
Coal	2	5	(*Horse Creek Seam.*)
Shale	14	0	
Coal	1	3	(*Blue Creek Seam.*)
Shale	15	9	
Coal		8	(*Jagger Seam.*)

(CONTINUED.)

	FEET	INCHES	
Sandstone	66	7	
Coal		4	(*Ream Seam.*)
Shale	7	9	
Coal		3	
Shale, sandstone	15	10½	
Coal		3	(*Lick Creek Seam.*)
Sandstone, shale	55	7	

Reported by Mr. J. B. Carrington.

The last two borings show that the strata between the Horse Creek and Black Creek groups are thinning out towards the west.

Drilling in S. 21, T. 13, R. 8 W.

	FEET	INCHES	
Soil	7	0	
Sandstone, shale	14	11	
Coal		7	(*Ream and Lick Creek Seams.*)
Shale, sandstone	13	2½	
Coal		6½	
Shale	5	½	
Coal		5	
Sandstone, shale	46	4½	
Coal and shale	2	7	(*Jefferson Seam.*)
Sandstone, shale	86	11	

(CONTINUED.)

	FEET	INCHES	
Coal	1	8	(*Black Creek Seam.*)
Sandstone, shale	25	0	

Reported by Mr. J. B. Carrington.

Drilling near center of S. 11, T. 12, R. 9 W. (?)

	FEET	INCHES	
Soil	6	0	
Sandstone, shale	61	5½	
Coal		10	(*Ream Seam.*)
Clay	1	7	
Sandstone, shale	35	6½	
Coal		3	(*Jefferson Seam.*)
Sandstone	45	2½	
Coal	1	10½	(*Black Creek Seam.*)
Clay	2	0	
Sandstone, shale	28	0	

Reported by Mr. J. B. Carrington.

The last four borings show how the strata between the Horse Creek and Black Creek groups (between the Ream and Lick Creek seams) have thinned out.

Drilling S. ½ of S. E. ¼ of S. 31, T. 13, R. 9 W.

	FEET	INCHES	
Shale, sandstone	65	0	
Coal	3	0	(*Blue Creek Seam.*)
Sandstone	18	0	
Coal	1	2	(*Blue Creek Seam.*)
Sandstone, shale, about	31	0	
Coal	4	6	(*Jagger Seam.*)

Reported by Mr. J. H. Hays.

Drilling in S. E. ¼ of S. E. ¼ of S. 32, T. 13, R. 9 W.

	FEET	INCHES	
Soil	2	0	
Sandstone, shale	91	6	
Coal	2	7	(*New Castle Seam.*)
Shale	12	0	
Coal	1	6	(*Horse Creek Seam.*)
Shale	12	0	
Coal and shale	1	8	(*Blue Creek Seam.*)
Clay	1	0	

Reported by Mr. J. B. Carrington.

This boring would have doubtless struck the *Jagger Seam* (thick) if it had been continued a few feet deeper.

Drilling in S. E. ¼ of N. E. ¼ of S. 35, T. 13, R. 9 W.

	FEET	INCHES	
Sandstone, soil	62	5	
Coal		4	
Clay, shale	8	6	(*Ream Seam.*)
Coal		2	
Clay, shale	11	4	

Reported by Mr. J. B. Carrington.

Drilling in N. W. ¼ of S. 8, T. 14, R. 9 W.

	FEET	INCHES	
Soil, shale	18	0	
Coal	2	0	
Shale	13	0	
Coal	3	2	
Shale	4	0	
Coal		8	
Shale, sandstone	22	2	
Coal		8	
Shale, sandstone	8	0	

Reported by Mr. J. B. Carrington.

Drilling in N. W. ¼ of S. 31, T. 13, R. 9 W.

	FEET	INCHES	
Soil	11	0	
Shale	22	0	
Coal	3	0	(*New Castle.*)
Shale	20	0	
Coal	1	0	(*Blue Creek Seam.*)
Shale	14	0	
Coal		7	(*Jagger Seam.*)
Shale		8	
Coal	1	0	
Measures	76	9	

Taken from Capt. Seymour's notes.
The *Horse Creek Seam* in the above drilling must be very thin and so not noticed in the boring.

Drilling in S. E. ¼ of S. W. ¼ of S. 25, T. 13, R. 10 W.

	FEET	INCHES	
Soil	5	0	
Shale	15	0	
Coal		6	(*Blue Creek Seam.*)
Shale	1	4	
Coal	2	6	

(CONTINUED.)

	FEET	INCHES	
Clay		6	
Sandstone		8	
Coal	5	6	(*Jagger Seam.*)

Taken from Capt. Seymour's notes.

Drilling in S. W. ¼ of S. W. ¼ of S. 13, T. 13, R. 10 W.

	FEET	INCHES	
Soil	7	0	
Shale	12	0	
Coal	2	6	(*New Castle Seam.*)
Sandstone, about	1	0	
Coal		10	(*Horse Creek Seam.*)
Shales, sandstones	32	8	
Coal	1	2	(*Blue Creek Seam.*)
Shale	17	10	
Coal		8	(*Jagger Seam.*)
Shale		4	
Coal	3	7	
Shale, sandstone	2	8	

Taken from Capt. Seymour's notes.

Drilling in N. E. ¼ of N. E. ¼ of S. 23. T. 13. R. 10 W.

	FEET	INCHES	
Soil	4	8	
Sandstone	78	0	
Shale and *coal*		6	(*Ream and Lick Creek Seams.*)
Sandstone	31	0	
Coal		6	
Shale, sandstone	20	3	
Coal	1	0	
Sandstone, shale	39	6	
Coal, shaly		6	(*Jefferson Seam.*)
Coal, clean	2	2	
Parting		½	
Coal, clean		9	
Shale, bituminous	1	8	
Shale	1	8	

Reported by the late Judge F. A. Gamble.

Drilling in N. E. ¼ of N. W. ¼ of S. 14, T. 13, R. 10 W.

	FEET	INCHES	
Soil	4	0	
Sandstone, shale	77	0	
Coal		9	(*Ream Seam.*)
Sandstone, shale	37	3	
Coal	2	6	(*Jefferson Seam.*)
Clay	2	0	

(CONTINUED.)

	FEET	INCHES	
Sandstone, shale	41	0	
Coal	4	0	(*Black Creek Seam.*)

Reported by the late Judge F. A. Gamble.
This last boring shows the *Black Creek Seam* to be unusually thick for especially this part of the field.

Drilling in N. E. ¼ of S. E. ¼ of S. 13, T. 13, R. 10 W.

	FEET	INCHES	
Soil	9	0	
Shale	2	0	
Coal		6	(*New Castle Seam.*)
Shale	2	6	
Coal	2	6	
Sandstone, shale	11	0	
Coal		10	(*Horse Creek Seam.*)
Shale	19	0	
Coal	1	6	(*Blue Creek Seam.*)
Sandstone, shale	7	6	
Coal		8	
Sandstone, shale	19	0	
Coal		7	(*Jagger Seam.*)
Shale		5	
Coal	4	6	

(CONTINUED.)

	FEET	INCHES	
Clay, few inches			
Sandstone			

Reported by Mr. H. R. Myers.

Shaft at Galloway, Walker County.

	FEET	INCHES	
Soil	11	2	
Sandstone	5	0	
Coal		6	(*Horse Creek Seam.*)
Clay	1	3	
Shale	21	3	
Coal	1	3	(*Blue Creek Seam.*)
Blue rock, may have coal streak near bottom	25	9	
Coal		9	(*Jagger Seam.*)
Shale		6	
Coal	3	4	
Sandstones, shales	91	0	
Coal		6	(*Ream Seam.*)
Limestone	2	0	
Sandstone	37	0	
Coal	2	6	(*Jefferson Seam.*)

Taken from the notes of Capt. Seymour.

Drilling in N. W. ¼ of S. E. ¼ of S. 3, T. 13, R. 12 W.

	FEET	INCHES	
Sand, gravels, etc	46	0	
Sandstone, with little shale	17	3	
Coal		6	(*New Castle.*)
Clay, shale	10	0	
Coal		6	(*Horse Creek.*)
Shales, sandstons	69	3	
Coal		6	(*Jagger.*)
Shales, sandstones	72	0	

Reported by Maj. G. D. Fitzhugh, C. E.

Drilling in N. W. ¼ of S. W. ¼ of S. 4, T. 13, R. 12 W.

	FEET	INCHES	
Loam and sand	12	0	
Sandstone, shale	48	8	
Coal, hard		9	(*New Castle.*)
Clay, shale, sandstone	12	6	
Coal, soft		6	(*Horse Creek.*)
Shale	17	4	
Shale, with thin *coal* seams		8	(*Jagger Seam.*)
Shale, with *calcareous nodules*	1	9	
Coal, soft		6	
Shale with *calcareous nodules*	15	3	
Sandstone, shale	55	0	

Reported by Maj. G. D. Fitzhugh, C. E.

Drilling in N. W. ¼ of S. W. ¼ of S. 33, T. 12, R. 12 W.

	FEET	INCHES	
Clay, sand, gravels	5	0	
Sandstones, shales	63	3	
Coal, hard		9	(*New Castle Seam.*)
Clay, shale	8	9	
Coal, soft		6	(*Horse Creek Seam.*)
Clay, shale	19	9	
Coal, hard		6	(*Jagger Seam.*)
Clay, shale, sandstone	133	3	
Coal, hard, splint	2	6	(*Jefferson Seam.*)
Clay, shale, sandstone	45	6	
Coal, bright and hard		9	(*Black Creek Seam.*)
Clay, shale	11	6	
Coal, hard, bright		9	
Clay, snales, sandstones	264	3	
Coal	1	0	
Shales, sandstones	151	8	

Reported by Maj. G. D. Fitzhugh, C. E.

Drilling in N. W. ¼ of S. W. ¼ of S. 34, T. 12, R. 12 W.

	FEET	INCHES	
Soil, clay, sand	6	0	
Sandstone, shale	29	6	
Coal, hard, bright		6	(*New Castle.*)

CONTINUED.

	FEET	INCHES	
Shale	6	9	
Coal		6	(*Horse Creek.*)
Clay, shale, sandstone	59	9	
Coal		3	(*Jagger Seam.*)
Clay, sandstone, shale	20	0	
Sandstone with thin *coal seams*	25	0	(*Ream and Lick Creek Seams.*)
Shale with thin *coal seams*	4	0	
Sandstone, shale	51	0	
Coal, splint	1	6	(*Jefferson Seam.*)
Shale		3	
Coal, splint		3	

Reported by Maj. G. D. Fitzhugh, C. E.

Drilling in S.W. ¼ of N. E. ¼ of S. 33, T. 12, R. 12 W.

	FEET	INCHES	
Sand, gravels	14	0	
Shale	3	0	
Coal, hard		6	(*Blue Creek Seam.*)
Clay	4	3	
Clay with thin *coal seams*	1	0	(*Jagger Seam.*)
Shales, sandstone	111	3	

CONTINUED.

	FEET	INCHES	
Coal		3	
Shale with thin *coal seams*	1	0	
Shale	7	0	
Coal		8	(*Jefferson Seam.*)
Shale with thin *coal seams*	1	3	
Shale with thin sandstones	4	8	
Coal, hard, splint	3	2	
Clay	6	7	
Shales, sandstones	41	4	
Shale with thin *coal seams*	3	0	
Shale	11	0	
Coal		6	(*Black Creek Seam.*)
Clay, shale, sandstone	62	6	

Reported by Maj. G. D. Fitzhugh, C. E.

Drilling in N. E. ¼ of S. W. ¼ of S. 27, T. 12, R. 12 W.

	FEET	INCHES	
Sand, clay	37	6	
Sandstone, clay	55	6	
Coal		6	(*Jagger Seam.*)
Clay, sandstone, shale	58	6	
Coal, splint	2	8	(*Jefferson Seam.*)
Clay, sandstone, shale	5	6	

Reported by Maj. G. D. Fitzhugh, C. E.

Drilling in N. W. ¼ of S. E. ¼ of S. 27, T. 12, R. 12 W.

	FEET	INCHES	
Clay, soil	7	0	
Coal, soft		6	(*Jagger Seam.*)
Clay, sandstone, shale	102	0	
Coal, splint	2	6	(*Jefferson Seam.*)
Clay	2	0	

Reported by Maj. G. D. Fitzhugh, C. E.

Drilling in S. E. ¼ of S. E. ¼ of S 13, T. 12, R. 12 W.

	FEET	INCHES	
Clay, sand, gravel	12	0	
Clay, soft, blue, siliceous	9	6	
Coal		6	(*Jagger Seam.*)
Shale, sandstone	60	0	
Coal, splint	2	6	(*Jefferson Seam.*)

Reported by Maj. G. D. Fitzhugh, C. E.

Drilling in S. W. ¼ of S. W. ¼ of S. 16, T. 12, R. 11 W.

	FEET	INCHES	
Soil, sand, clay	12	0	
Sandstone	25	6	
Coal		6	(*New Castle Seam.*)
Shale, sandstone	52	3	
Coal		9	(*Jagger Seam.*)
Shale, sandstone	24	0	

Reported by Maj. G. D. Fitzhugh, C. E.

Drilling in S. W. ¼ of S. E. ¼ of S. 6, T. 12, R. 11 W.

	FEET	INCHES	
Soil, sand, gravel	71	0	
Sandstone, shale	28	6	
Coal, soft, shaly		3	(*Jefferson Seam* ?)
Shale with thin *coal seams*	7	3	
Sandstone, shale	22	0	
Coal, splint	1	0	(*Black Creek Seam* ?)
Clay, sandstone, shale	19	6	

Reported by Maj. G. D. Fitzhugh, C. E.

[illegible] ¼ of S 15, T. 12, R. 12 W.

	FEET	INCHES	
Measures, about	30	0	
Coal, about		3	
Measures, about	15	0	
Coal	2	6	(*Jefferson Seam.*)

Reported by Col. T. H. Aldrich.

Drilling at Fayette C. H., in N. W. ¼ of N. E. ¼ of S. 7, T. 16, R. 12 W.

	FEET	INCHES	
Soil, about	15	0	
Gravel, about	15	0	
Earthy material, hard, about	30		
Mud (muck), black 8to	10		
Gravel, yellow ....5 to	6		
Clay, stiff, black....5 to	180		
Rock ....175 to	180		
Coal, between....4 and	5		
Rock ....20 to	25		

Reported by Mr. Mace.
The coal of this last drilling is believed to be the *Pratt Seam* and to be over estimated. The drilling was done with a *churn drill.*

INDEX.

Adger Slope, Slope No. 5, Blue Creek Mines 87
Aldrich, T. H., quoted 58, 299
American Coal Seam 129, 130, 133
“ “ “ at Corona 276
“ “ “ at Patton 275
“ “ “ at Persimmon Lick 142
“ “ “ in American Mines 142
“ “ “ in eastern part of the Warrior Coal Field 133
“ “ “ in central part of the Warrior Coal Field 139
“ “ “ in drilling at Sulphur Spring Church 134, 255
“ “ “ in drilling between Blossburg and Adamsville 36, 269
“ “ “ in drilling in S. 28, T. 17, R. 6 W 270
“ “ “ in drilling in S. 35, T. 17, R. 4 W 259
“ “ “ in drilling on Camp Branch 258
“ “ “ in drilling one mile south of Coalburg 134, 260
“ “ “ in T. 19, R. 5 W 135, 141, 142, 143
“ “ “ in T. 15, R. 7 W 134; 135, 136, 139, 140: 141, 142
“ “ “ in T. 16, R. 6 W 134, 136, 137, 138, 139
“ “ “ in T. 17, R. 6 W 133
“ “ “ in T. 18, R. 4 W 133
American coal seam outcrops 133
American Mines 142
Anticlinal, between Big and Little Basins 3
Anticlinal, Blountsville 3
Appendix, sections of drillings and shafts 243
Area of Black Creek Coal Seam 10
Area of Warrior Coal Basin 2
Ash old mine 217

Bailey coal bed 178
Baker's old factory, coal at 178
Basin area, Warrior Coal Field 9
Basin, Big 2
Basin, Little 2, 3
Basin, Warrior Coal 1, 2, 3
Beechy Hollow Coal Bed 106
Bell Sumter Slope, No. 3, Blue Cree Mines 89
Berry Mountain Coal Seam, in drilling at Warrior 266
Bessie Mine 102, 103
Big Basin, Warrior Coal Field 2
Black band coal seam 85
Black band iron ore 3; 9; 18, 19, 38, 39, 46, 65
Black band iron ore in Blue Creek coal seam 92
Black band iron ore in Horse Creek coal seam 97
Black band iron ore in Jefferson coal seam 77
Black band iron ore in Pratt coal seam 151
Black Creek coal seam 1, 4, 9, 10, 11
Black Creek coal seam at New Castle Mines 15
Black Creek Coal Seam along eastern edge of Warrior Coal Field 14
“ “ “ “ in central part of the Warrior Coal Field, along the Black Warrior River 33

Black Creek Coal Seam in western part of the Warrior Coal Field.......... 37
" " " " area.. 10
" " " " in the Big Basin.............................. 13
" " " " in drilling at Morris Station.................... 268
" " " " in drilling at Jasper........................ 273
" " " " in drilling at Patton 276
" " " " in drilling at Warrior 265, 267
" " " " in drilling in S. 11, T. 12, R. 9 W.................. 285
" " " " in drilling in S. 6, T. 12, R. 11 W.................. 298
" " " " in drilling in S. 33, T. 12, R. 12 W..................294, 296
" " " " in drilling in S. 21, T. 13, R. 8 W 285
" " " " in drilling in S. 33, T. 13, R. 8 W 281
" " " " in drilling in S. 31, T. 13, R. 9 W 288
" " " " in drilling in S. 14, T. 13, R. 10 W 291
" " " " in drilling in S. 17, T. 16, R. 2 W 263
" " " " in drilling near Newcastle 265
" " " " in Jefferson old shaft 20, 267
" " " " in Little Basin 11
" " " " in T. 10, R. 10 W.............................. 38
" " " " in T. 11, R. 4 W...............................29, 32
" " " " in T. 11, R. 5 W............................... 29
" " " " in T. 11, R. 8 W............................... 35
" " " " in T. 11, R. 10 W.............................. 37
" " " " in T. 12, R. 3 W.........................26, 27, 31, 32
" " " " in T. 12, R. 4 W.........................27, 28, 29, 32
" " " " in T. 12, R. 5 W.............................29, 31, 32
" " " " in T. 12, R. 6 W............................. 29, 35
" " " " in T. 12, R. 7 W............................... 35
" " " " in T. 12, R. 8 W............................. 35, 36
" " " " in T. 12, R. 9 W............................. 36, 37
" " " " in T. 12, R. 10 W.............................. 37
" " " " in T. 12, R. 11 W............................ 37, 38
" " " " in T. 12, R. 12 W.............................. 38
" " " " in T. 13, R. 1 W............................... 17
" " " " in T. 13, R. 2 W............................. 17, 18
" " " " in T. 13, R. 4 W.........................25, 26, 31
" " " " in T. 13, R. 5 W.........................23, 29, 30, 31
" " " " in T. 13, R. 6 W............................. 34, 35
" " " " in T. 13, R. 7 W............................. 34, 35
" " " " in T. 13, R. 8 36
" " " " in T. 13, R. 10 W.............................. 37
" " " " in T. 14, R. 1 W............................... 16
" " " " in T. 14, R. 2 W......................16, 17, 18, 20
" " " " in T. 14, R. 3 W.........................18, 19, 20
" " " " in T. 14, R. 4 W............................. 22, 23
" " " " in T. 14, R. 5 W..................22, 23, 24, 25, 30, 33
" " " " in T. 14, R. 6 W............................. 33, 34
" " " " in T. 15, R. 2 W............................. 15, 16
" " " " in T. 15, R. 4 W............................... 22
" " " " in T. 15, R. 5 W......................20, 21, 22, 24
" " " " in T. 16, R. 2 W............................... 15
" " " " in T. 16, R. 5 W............................. 20, 21
" " " " in T. 17, R. 3 W............................... 14
" " " " in T. 19, R. 5 W............................. 11, 14
" " " " in T. 19, R. 6 W............................. 12, 13
" " " " in T. 20, R. 6 W............................. 11, 12
" " " " in T. 21, R. 6 W............................... 11
" " " " in T. 21, R. 7 W............................... 11
" " " " in York Coal Bed................................ 25
" " " " line of outcrops................................ 10
" " " " outcrops.................................... 11, 85

Black Creek Group of Coals..9
Black Diamond (Snake) Mine (Slope)..98
Blocker Coal Seam, (See Brookwood Coal Seam)
Blossburg Drifts..153
" Slopes..153, 154
Blountsville anticlinal..3
Blue Creek Coal Seam..65, 66, 85
" " " " along eastern edge of Warrior Coal Field..85
" " " " at Kennedy Coal Bed..90
" " " " in Adger Slope No. 5 of the Blue Creek Mines..87
" " " " in Bell Sumter Slope, No. 3 of the Blue Creek Mines. 89
" " " " in Big Basin..90
" " " " in Blue Creek Mines..87
" " " " in Chickasaw Shaft..95
" " " " in Connellsville Mine..91
" " " " in Drift No. 1. Blue Creek Mines..86
" " " " in drilling at Morris Station..268
" " " " in drilling at Patton..275
" " " " in drilling in S. 33, T. 12, R. 12 W..295
" " " " in drilling in S. 25, T. 13, R. 9 W..283
" " " " in drilling in S. 31, T. 13, R. 9 W..286
" " " " in drilling in S. 32, T. 13, R. 9 W..286
" " " " in drilling in S. 13, T. 13, R. 10 W..289, 291
" " " " in drilling in S. 25, T. 13, 10 W..288
" " " " in drilling in S. 11, T. 14, R. 7 W..272
" " " " in drilling in S. 20, T. 14, R. 7 W..274
" " " " in drilling in S. 3, T. 14, R. 8 W..278
" " " " in drilling in S. 6, T. 14, R. 8 W..282
" " " " in drilling in S. 8, T. 14, R. 8 W..279
" " " " in drilling in S. 10, T. 14, R. 8 W..277
" " " " in drilling in S. 9, T. 15, R. 6 W..272
" " " " in drilling in S. 16, T. 15, R. 6 W..271
" " " " in drilling in S. 17, T. 16, R. 2 W..261
" " " " in drilling in S. 30, T. 16, R. 2 W..270
" " " " in drilling in S. 28, T. 17, R. 6 W..271
" " " " in Galloway Shaft..95, 292
" " " " in Johns Slope, No. 4 of the Blue Creek Mines..88, 89
" " " " in McDonald's Shaft..95
" " " " in Pocahontas Shaft..95
" " " " in Shannon Slope, No. 2 of the Blue Creek Mines... 89
Blue Creek Coal Seam in T. 12, R. 11, W..96
" " " " in T. 13 R. 8 W..93, 94
" " " " in T. 13 R. 9 W..94, 95
" " " " in T. 13 R. 10 W..94, 95, 96
" " " " in T. 13 R. 11 W..96
" " " " in T. 14, R. 6 W..93
" " " " in T. 14, R. 7 W..93
" " " " in T. 14, R. 8 W..94
" " " " in T. 15, R 2 W..91, 92
" " " " in T. 15, R 3 W..92, 93
" " " " in T. 15, R 5 W..93
" " " " in T. 16, R 2 W..91
" " " " in T. 17, R 6 W..93
" " " " in T. 19, R 5 W..86, 87, 88, 91
" " " " in T. 19, R 6 W..88, 89, 91
" " " " in T. 20, R 6 W..89, 90
" " " " near Newcastle..264
Blue Creek Coal Seam outcrops..86
Blue Creek Mines, Blue Creek Coal Seam in..87
Bluff Creek drilling..249
Bore holes, (See drillings).
Borings, (See drillings).

Brake Old Mine 46
Bray Mine 4
Brazil Mines, drifts 152
Bremen Coal Bed 28
Bricks, vitrified 234
Brookwood and Guide coal seams at Brookwood 237
Brookwood and Milldale Coal Seams, united 230, 235
Brookwood Coal Seam 205, 228
Brookwood Coal Seam between Davis and Big Shoal creeks 209
Brookwood Coal Seam in Drift No. 4, Brookwood 234
" " " **in drilling at Cottondale** 210
" " " **in drilling in S. 35, T. 20, R. 9 W** 247
" " " **in drilling near Tuscaloosa** 243
" " " **in mines at Brookwood** 235
" " " **in T. 18, R. 5 W** 231
" " " **in T. 19, R. 6 W** 231
" " " **in T. 19, R. 7 W** 232, 233
" " " **in T. 19, R. 8 W** 233
" " " **in T. 19, R. 9 W** 239
" " " **in T. 20, R. 7 W** 230, 231, 234
" " " **in T. 20, R. 8 W** 233, 234, 235
" " " **in T. 20, R. 9 W** 238, 239, 240
" " " **in T. 21, R. 7 W** 229
" " " **in T. 21, R. 8 W** 229, 230, 235, 237
" " " **in T. 22, R. 8 W** 229
Brookwood Coal Seam in Shaft near Northport 240
" " " **outcrops** 229
" " " **outcrops near Tuscaloosa** 240
" " " **output** 229
" " " **to east of the Black Warrior River** 229
" " " **to west of the Black Warrior River** 237
Brookwood Group of Coals 205
Brown Mine 151
Building stones 7
Bynum Drift 126
Bynum Shaft 83

Cahaba Field, Coals of the 5
Calumet Mine (Drift) 114
Camp Branch drilling 257
Cannel Coal 129
Cardiff Coal Seam, (See Fire Clay Coal Seam).
Cardiff Drifts, new and old 152
Carrington, J. B., quoted 270. 273, 474, 378 279, 280, 281, 282, 283, 284, 285, 286, 287
Chambers Mines (Drifts) 210, 211
Chambers Coal Seam, (See Clements Coal Seam).
Characteristics of the Warrior Coal Field 2
Chickasaw Shaft 82
Clay, Potter's 7
Clements Coal Seam 205, 206
" " " **in Chambers, Foster, and Prude Mines** 210
" " " **in drilling at Cottondale** 210
" " " **in drilling in S. 35, T. 20, R. 9 W** 247
" " " **in drilling in S. 2, T. 21, R. 8 W** 250
" " " **in drilling in S. 35, T. 21, R. 8 W** 250
" " " **in drilling in S. 1, T. 22, R. 8 W** 253
" " " **in drilling near Tuscaloosa** 243
" " " **in Gould Shaft, in S. 1, T. 22, R. 8 W** 207, 252
" " " **in south-east part of the Warrior Coal Field** 206
" " " **in T. 20, R. 7 W** 209
" " " **in T. 20, R. 8 W** 209
" " " **in T. 20, R. 9 W** 209

Clements Coal Seam in T. 21, R. 7 W 208
“ “ “ in T. 21, R. 8 W 208, 209, 210
“ “ “ in T. 21, R. 9 W 210, 211
“ “ “ in T. 21, R. 10 W 211
“ “ “ in T. 22, R. 7 W 207
“ “ “ in T. 22, R. 8 W 207
Clements Coal Seam outcrops 206
Clifty Coal Bed 25
Coal Basin, Warrior 1, 2, 3
Coalburg Drifts 151
Coal Cave Hollow 171
Coaldale Mines (Drifts) 18
Coal groups 3, 4
Coal, kinds of 6
Coal seams, number of 4
Coal output 6
Coal plants 6
Coal mined 6
Coals of the Cahaba Coal Field 5
Coals of the Warrior Coal Basin 3, 5
Coals, thickness of the 5, 6
Coals, uses of the 6
Coal Valley Coal Seam, (See Corona Coal Seam.)
Coal Valley, new 163
Coal Valley, old 162
Coals, workable 5
Cobb Lower Coal Seam 169, 174
“ “ “ “ at Bailey Coal Bed 178
“ “ “ “ at Baker's old Factory 178
“ “ “ “ at Ellis' Coal Bed 178
“ “ “ “ at Jackson's Coal Bed 178
“ “ “ “ in drilling in S. 35, T. 17, R. 4 W 259
“ “ “ “ in drilling in S. 5, T. 21, R. 9 W 246
“ “ “ “ in drilling near Tuscaloosa 245
“ “ “ “ in drilling on Camp Branch 257
“ “ “ “ in drilling on head of Camp Branch 257
“ “ “ “ in south-west part of the Warrior Coal Field 174
“ “ “ “ in T. 15, R. 10 W 178
“ “ “ “ in T. 15, R. 11 W 178
“ “ “ “ in T. 16, R. 10 W 178
“ “ “ “ in T. 16, R. 12 W 178
“ “ “ “ in T. 17, R. 3 W 175
“ “ “ “ in T. 17, R. 4 W 175
“ “ “ “ in T. 17, R. 5 W 176
“ “ “ “ in T. 17, R. 7 W 177
“ “ “ “ in T. 18, R. 4 W 175
“ “ “ “ in T. 18, R. 5 W 176
“ “ “ “ in T. 18, R. 6 W 176
“ “ “ “ in T. 18, R. 7 W 177
“ “ “ “ in T. 19, R. 5 W 175
“ “ “ “ in T. 20, R. 7 W 175
“ “ “ “ in T. 21, R. 7 W 174
“ “ “ “ in T. 21. R. 9 W 178
“ “ “ “ in T. 21, R. 10 W 178
“ “ “ outcrops 174
Cobb Upper Coal Seam 169, 178
“ “ “ “ in drilling in S. 5, T. 21, R. 9 W 246
“ “ “ “ in drilling near Tuscaloosa 244
“ “ “ “ in drilling on Camp Brand 257
“ “ “ “ in drilling on head of Camp Branch 256
“ “ “ “ in T. 15, R. 9 W 180

Cobb Upper Coal Seam in T. 15, R. 11 W........ 181
" " " " in T. 15, R. 12 W........ 181
" " " " in T. 16, R. 8 W........ 180
" " " " in T. 16, R. 10 W........ 181
" " " " in T. 16, R. 11 W........ 181
" " " " in T. 17, R. 4 W........ 179
" " " " in T. 17, R. 5 W........ 179
" " " " in T. 17, R. 7 W........ 180
" " " " in T. 17, R. 8 W........ 180
" " " " in T. 18, R. 4 W........ 179
" " " " in T. 18, R. 5 W........ 179
" " " " in T. 18, R. 6 W........ 179
" " " " in T. 19, R. 5 W........ 179
" " " " in T. 21 R. 7 W........ 178, 179
" " " " in T. 21, R. 9 W........ 181
" " " " in T. 21, R. 10 W........ 181
" " " outcrops........ 178
Cobb Group of Coals........ 169
Coke output........ 6
Coke ovens........ 6
Collins Coal Bed........ 229
Collins Coal Seam, (See Brookwood Coal Seam.)
Connellsville Mine (Slope)........ 76, 91
Cooper Slope........ 15
Corona Coal Seam........ 143, 147, 148
Corona Coal Seam at and near Coal Valley........ 162
" " " at and near Patton........ 164
" " " at Corona........ 276
" " " at Thrasher Coal Bed........ 165
" " " at Deer Head Mines (Drifts)........ 164
" " " in Drift at New Coal Valley........ 163
" " " in Drift at old Coal Valley........ 162
" " " in Drift No. 1, Corona........ 164
" " " in Drift No. 3, Corona........ 164
" " " in Drift No. 2, Patton........ 164
" " " in Drifts Nos. 1 and 2, Mountain Valley........ 165
" " " in drilling at Patton........ 275
" " " in drilling in S. 25, T. 15, R. 9 W........ 163. 274
" " " in Lockhart Mine (Drift)........ 164
" " " in Smith's old slope........ 164
Curbing stones........ 7
Currey Coal Seam........ 129 131
Currey Coal Seam in drilling at Corona........ 276
" " " in drilling at Patton........ 275
" " " in drilling at Sulphur Spring Church........ 131, 132, 255
" " " in drilling in S. 28, T. 17, R. 6 W........ 270
" " " in drilling on Camp Branch........ 258
" " " in T. 15, R. 3 W......
" " " in T. 16, R. 2 W........ 132
" " " in T. 16, R. 3 W........ 131, 132
" " " in T. 16, R. 4 W........ 132
" " " in T. 17, R. 5 W........ 132
Currey Coal Seam outcrops........ 131

Dafforn Coal Seam. (See Johnson Coal Seam.)........ ——
Day Opening........ 28
Day's Gap, coal in........ 161
DeBerniere (Little Warrior) Mines (Drifts)........ 102
Deer Head Drifts........ 164
Delmar Drifts........ 54

Dip of strata in Warrior Coal Field 2
Dirty Coal Seam. (See Jagger Coal Seam 73
Disturbances 2
Dolomite Mines (Slopes) 149
Dora Mines (Drifts) 108
Double Coal Seam. (See American Coal Seam) 133, 211
Double Falls, coal at 160
Drainage of Warrior Coal Basin 2
Drillings and shafts, records of 243
Drilling and shaft at Warrior 266
Drilling at Corona 276
" " **Morris' Station** 268
" " **Fayyette, C. H** 299
" " **foot of Squaw Shoals** 249
" " **Jasper** 273
" " **Patton** 275
" " **Sulphur Springs Church** 254
" " **Warrior** 265, 266
Drilling between Blossburg and Adamsville 269
" **in S. 11, T. 12, R. 9 W** 285
" " **S. 6, T. 12, R. 11 W** 298
" " **S. 16, T. 12, R. 11 W** 298
" " **S. 13, T. 12, R. 12 W** 297
" " **S. 15, T. 12, R. 12 W** 299
" " **S. 27, T. 12, R. 12 W** 296, 297
" " **S. 33, T. 12, R. 12 W** 294, 295
" " **S. 34, T. 12, R. 12 W** 294
" " **S. 34, T. 13, R. 8 W** 281
" " **S. 21, T. 13, R. 8 W** 284
" " **S. 30, T. 13, R. 8 W** 283
" " **S. 33, T. 13, R. 8 W** 281
" " **S. 25, T. 13, R. 9 W** 283
" " **S. 31, T. 13, R. 9 W** 286, 288
" " **S. 32, T. 13, R. 9 W** 286
" " **S. 35, T. 18, R. 9 W** 287
" " **S. 13, T. 13, R. 10 W** 289, 291
" " **S. 14, T. 13, R. 10 W** 290
" " **S. 23, T. 13, R. 10 W** 290
" " **S. 25, T. 13, R. 10 W** 288
" " **S. 3, T. 13, R. 12 W** 293
" " **S. 4, T. 13, R. 12 W** 293
" " **S. 11, T. 14, R. 7 W** 272
" " **S. 20, T. 14, R. 7 W** 274
" " **S. 3, T. 14, R. 8 W** 278
" " **S. 6, T. 14, R. 8 W** 282
" " **S. 8, T. 14, R. 8 W** 279
" " **S. 10, T. 14, R. 8 W** 277
" " **S. 8, T. 14, R. 9 W** 287
" " **S. 9, T. 15, R. 6 W** 272
" " **S. 6, T. 15. R. 6 W** 271
" " **S. 25, T. 15, R. 9 W** 274
" " **S. 32, T. 15, R. 10 W** 277
" " **S. 17, T. 16, R. 2 W** 261
" " **S. 30, T. 16, R. 4 W** 269
" " **S. 34, T. 17, R. 4 W** 256
" " **S. 35, T. 17, R. 4 W** 259
" " **S. 28, T. 17, R. 6 W** 270
" " **S. 30, T. 20, R. 8 W** 249
" " **S. 34, T. 20, R. 9 W** 248
" " **S. 35, T. 20, R. 9 W** 247
" " **S. 2, T. 21, R. 8 W** 250

Drillings in S. 35, T. 21, R. 8 W 250
" " S. 5, T. 21, R. 9 W 245
" " S. 1, T. 22, R. 8 W 253
Drilling near Gamble Mines 279, 280
" " New Castle 264
" " Tuscaloosa 243
Drilling on Bluff Creek 249
" " Camp Branch 257
Drilling one mile south of Coalburg 260
Drift, Bynum 126
" Calumet 114
" Clifty 25
" Fuller (Purvis) 27, 31
" Harris 31
" Hill's, No. 2 28
" Jett 152
" Little Basin, No. 1 86
" Morris-Goss, No. 1 83
" S. 29, T. 10, R. 10 W 54
" S. 11, T. 12, R. 3 W 31
" S. 14, T. 12, R. 4 W 27
" S. 19, T. 13, R. 9 W 127
" S. 8, T. 15, R. 6 W 111
" Utley 190
Drifts, Blossburg 153
" Brazil 152
" Brookwood 234
" Coaldale 18
" Coalburg 151
" Cardiff, old and new 152
" Chambers 210, 211
" Corona 164
" DeBerniere (Little Warrior) 102
" Deer Head 164
" Delmar 54
" Dora 108
" Foster 210
" Gamble Mines 116
Horse Creek Mines 107
" Hoene 19
" Ivey Leaf 108
" Mountain Valley 165
" Natural Bridge 54
" near Oakman 162
" Patton 164
" Peacock 162
" Pierce old 18
" Pratt Mines 150
" Prude, lower and upper 210
" Read 84
" Stockton 151
" Tupelo 52
" Wolf Den Hollow 19
" York 25
" S. 35, T. 20, R. 9 W 238
" S. 17, T. 21, R. 7 W 213
" S. 26, T. 21, R. 8 W 229
" S. 2, T. 21, R. 9 W 236
" S. 12, T. 21, R. 9 W 218
" S. 13, T. 21, R. 9 W 218
" S. 11, T. 22, R. 8 W 212

Dudley Old Slope 149
Duree Coal Seam. (See Johnson Coal Seam).
Durée new and old shafts 224

Eaton Coal Seam. (See Jagger Coal Seam.)........................... ———
Elk River Coal Seam. (See Jefferson Coal Seam.)........................... ———
Ellis Coal Bed........................... 178

Factory Coal Seam. (See Johnson Coal Seam.)
Faults........................... 8
Fayette C. H. drilling 299
Fidelity Mines........................... 47
Fire Clay (Cardiff) Coal Seam...........................129, 143, 148
Fire Clay Coal Seam at Cardiff........................... 144
“ “ “ “ in central part ofthe Warrior Coal Field........................... 148
“ “ “ “ in Day's Gap........................... 147
“ “ “ “ in Dolomite Slope........................... 144
“ “ “ “ in drilling at Sulphur Spring Church...........................144, 254
“ “ “ “ in drilling between Adamsville and Blossburg...........................144, 269
“ “ “ “ in drilling on Camp Branch........................... 258
“ “ “ “ in drilling one mile south of Coalburg...........................144, 260
“ “ “ “ in drilling in S. 35, T. 17, R. 4 W........................... 259
“ “ “ “ in T. 15, R. 6 w........................... 146
“ “ “ “ in T. 15, R. 7 W........................... 146
“ “ “ “ in T. 15, R. 8 W...........................146, 147, 148
“ “ “ “ in T. 15, R. 9 W........................... 147
“ “ “ “ in T. 16, R. 4 W........................... 144, 145
“ “ “ “ in T. 16, R. 5 W........................... 145
“ “ “ “ in T. 16, R. 6 W........................... 146
“ “ “ “ in T. 16, R. 7 W........................... 146
“ “ “ “ in T. 16, R. 8 W........................... 147
“ “ “ “ in T. 17, R. 4 W........................... 144
“ “ “ “ in T. 17, R. 5 W........................... 145
“ “ “ “ in T. 17, R. 6 W........................... 145
“ “ “ “ in T. 18, R. 4 W........................... 144
“ “ “ “ in T. 19, R. 5 W........................... 144
“ “ “ “ in T. 20. R. 7 W........................... 144
“ “ “ “ outcrops........................... 144
Fitzhugh, Major G. D., quoted.............57; 58; 72; 293; 294, 295, 296, 297, 298
Frierson Coal Seam (See Thomas Coal Seam.)........................... ———
Frierson Old Mine........................... 171
Forests........................... 7
Fossils........................... 7
Foster Drifts........................... 210
Fuller (Purvis) Drift........................... 27

Galloway Mines...........................53, 84, 95, 119, 292
Gamble Coal Seam. (See Horse Creek Coal Seam.)........................... ———
Gamble, Judge F. A., quoted 290, 291
Gamble Mines........................... 116
Gamble Mines drillings 279, 280
Garland Coal Seam. (See Milldale Coal Seam.)........................... ———
Gillespie Coal Seam...........................129, 130
Gillespie Coal Seam in drilling at Patton........................... 275
“ “ “ in drilling at Sulphur Spring Church 130, 255
“ “ “ in drilling in S. 28, T. 17, R. 6 W........................... 270
“ “ “ in T. 15, R. 3 W........................... 131
“ “ “ in T. 16, R. 4 W........................... 131

Gillespie Coal Seam in T. 16, R. 5 W. 131
" " " in T. 17, R. 6 W. 131
" " " outcrops 130, 131
Gross-Morris Drift No. 1 83
Gross-Morris Shaft No. 1 83
Gould old slope and drifts 170
Gould Shaft 207
Gould, Wm., quoted 252
Groups, coal 3, 4
Guide Coal Seam 205, 241
Guide (New Castle) Coal Seam 120
Guide and Brookwood coal seams 234
Guide Coal Seam in drilling near Tuscaloosa 243
Guide Coal Seam in T. 20, R. 7 W 241
" " " in T. 20, R. 9 W 242
" " " in T. 21, R. 8 W 241
" " " in T. 21, R. 9 W 241
" " " in T. 21, R. 10 W 242
Gwin Coal Seam 183, 193
" " " in drilling in S. 34, T. 20, R. 9 W 248
" " " in drilling in S. 5, T. 21, R. 9 W 295
" " " in drilling near Tuscaloosa 244
" " " in T. 17, R. 8 W 200
" " " in T. 18, R. 5 W 195
" " " in T. 18, R. 6 W 195, 196, 197, 198
" " " in T. 18, R. 7 W 198, 199, 200
" " " in T. 18, R. 8 W 200, 201, 202
" " " in T. 18, R. 9 W 199, 200
" " " in T. 18, R. 10 W 201
" " " in T. 19, R. 5 W 195
" " " in T. 19, R. 6 W 194, 196, 197
" " " in T. 19, R. 7 W 194, 199
" " " in T. 19, R. 8 W 199, 203
Gwin Coal Seam in T. 19, R. 10 W 201, 202, 203
" " " in T. 20, R. 6 W 194
" " " in T. 20, R. 7 W 194
" " " in T. 20, R. 8 W 202, 203
" " " in T. 20, R. 9 W 204
" " " in T. 20, R. 10 W 203
" " " in T. 21, R. 7 W 193, 194
" " " in T. 21, R. 9 W 204
" " " in T. 21. R. 10 W 204
Gwin Coal Seam on Valley, Mud Wolf and Big Shoal creeks 196
" " " outcrops 193
Gwin Group of Coals 183

Hagler's Mill coal outcrop 191, 192
Hanby Coal Bed 105
Harris Drift 26, 31
Hays, J. H., quoted 286
Hill Openings, Nos. 1 and 2 28
Hoene Drift 19
Holly Springs (X Roads) outcrop 181
Horse Creek (Mary Lee) Coal Seam 65, 66, 96
Horse Creek Coal Seam along the eastern edge of the Warrior Coal Field .. 98
Horse Creek Coal Seam at Beechy Hollow Coal Bed 106
" " " " at DeBerniere (Little Warrior) 102
" " " " at Hanby Coal Bed 105
" " " " at New Castle 100
" " " " at Palos 103

Horse Creek Coal Seam at Palos, in Turner old mine (Slope) 103
“ “ “ “ at Palos, in Slope No. 2 104
“ “ “ “ at Williams Coal Bed 104
Horse Creek Coal Seam in Big Basin............ 97
“ “ “ “ in Bessie Mine........ ....102, 103
“ “ “ “ in Calumet Mine (Drift) 114
“ “ “ “ in central part of the Warrior Coal Field, along the Black Warrior River 109
“ “ “ “ in Chickasaw Shaft... 119
“ “ “ “ in Dora Mines (Drifts)..... 108
“ “ “ “ in drilling at Morris Station 268
“ “ “ “ in drilling at Patton 275
“ “ “ “ in drilling in S. 33, T. 12, R. 12 W............ 294
“ “ “ “ in drilling in S. 34, T. 12, R. 12 W............ 295
“ “ “ “ in drilling in S. 34, T. 13, R. 8 W............ 281
“ “ “ “ in drilling in S. 25, T. 13, R. 9 W............ 283
“ “ “ “ in drilling in S. 31, T. 13, R. 9 W............ 288
“ “ “ “ in drilling in S. 32, T. 13, R. 9 W............ 286
“ “ “ “ in drilling in S. 13, T. 13, R. 10 W...........289, 291
“ “ “ “ in drilling in S. 4, T. 13, R. 12 W............ 293
“ “ “ “ in drilling in S. 31, T. 13, R. 12 W........... 293
“ “ “ “ in drilling in S. 3, T. 14, R. 8 W............ 278
“ “ “ “ in drilling in S. 6. T. 14, R. 8 W............ 282
“ “ “ “ in drilling in S. 8, T. 14, R. 8 W............ 279
“ “ “ “ in drilling in S. 10, T. 14, R. 8 W............ 277
“ “ “ “ in drilling in S. 16, T. 15, R. 6 W............ 271
“ “ “ “ in drilling in S. 17, T. 16, R. 2 W............ 261
“ “ “ “ in drilling in S. 30, T. 16, R. 4 W............ 270
“ “ “ “ in drilling in S. 28, T. 17, R. 6 W............ 270
“ “ “ “ in drilling near Gamble Mines 279, 280
“ “ “ “ in drilling near Newcastle 264
Horse Creek Coal Seam in Galloway Shaft...... ....119, 292
“ “ “ “ in Gamble Mines..... 116
“ “ “ “ in Horse Creek Mines 107
“ “ “ “ in Ivey Leaf Mines.... 108
“ “ “ “ in Little Basin....... 97
“ “ “ “ in Morrow Slope......... 99
“ “ “ “ in Mountain Top Slope 107
“ “ “ “ in Price Mines..... 108
“ “ “ “ in Snake (Black Diamond) Slope 98
“ “ “ “ in Tennessee (Vulcan) Slope 98
Horse Creek Coal Seam in T. 13, R. 8 W............ ....116, 117, 119
“ “ “ “ in T. 13, R. 10 W....... 119
“ “ “ “ in T. 14, R. 5 W...... 109
“ “ “ “ in T. 14, R. 6 W........................109, 111, 112
“ “ “ “ in T. 14, R. 7 W..........................114, 115, 116
“ “ “ “ in T. 14 R. 8 W......................115, 116, 117, 118
“ “ “ “ in T. 14, R. 9 W...... ....118, 119
“ “ “ “ in T. 15, R. 2 W......... 100
“ “ “ “ in T. 15, R. 3 W..... ....100, 101
“ “ “ “ in T. 15, R. 4 W......... ....101, 107
“ “ “ “ in T. 15, R. 5 W........ ....107, 108
“ “ “ “ in T. 15, R. 6 W. 106, 107, 110, 111, 112, 113, 114
“ “ “ “ in T. 15, R. 7 W...... 114
“ “ “ “ in T. 16, R. 2 W...... .... 99, 100
“ “ “ “ in T. 16, R. 4 W...... 102
“ “ “ “ in T. 16, R. 5 W............. ....102, 103, 104, 106
“ “ “ “ in T. 16, R. 6 W..... ....105, 107
“ “ “ “ in T. 16, R. 8 W..... 106
“ “ “ “ in T, 17, R. 3 W...... .... 98, 99

Horse Creek Coal Seam in T. 17, R. 5 W 104, 105
" " " " in T. 19, R. 5 W 97, 98
" " " " in T. 19, R. 6 W 98
" " " " in T. 20, R. 6 W 97
Horse Creek Coal Seam near Cordova 113
" " " " near Holly Grove and Chickasaw 119
Horse Creek Coal Seam output 96
Horse Creek Group of Coals 4, 65, 66
Horse Creek Mines 107
Hospital Coal Seam, see Johnson Coal Seam.
Hospital Shaft 224

Ivey Leaf Mines 108

Jagger and Blue Creek coal seams together 81
Jagger Coal Bed 85
Jagger Coal Seam 65, 66, 73
Jagger Coal Seam along eastern edge of Warrior Coal Field 76
Jagger Coal Seam at Newcastle 77
" " " in Big Basin 75
" " " in Bynum Shaft 83
" " " in Chickasaw Shaft 82
Jagger Coal Seam in drilling at Morris Station 268
" " " in drilling at Patton 275
" " " in drilling in S. 16, T. 12, R, 11 W 298
" " " in drilling in S. 13, T. 12, R. 12 W 297
" " " in drilling in S. 27, T. 12, R. 12 W 296, 297
" " " in drilling in S. 31, T. 12, R. 12 W 293
" " " in drilling in S. 33, T. 12, R. 12 W 294, 295
" " " in drilling in S. 34, T. 12, R. 12 W 295
" " " in drilling in S. 33, T. 13, R. 8 W 281
" " " in drilling in S. 25, T. 13, R. 9 W 283
" " " in drilling in S. 31, T. 13, R. 9 W 286, 288
" " " in drilling in S. 13, T. 13, R. 10 W 289, 291
" " " in drilling in S. [illegible], T.13, R. 10 W 289
" " " in drilling in S. 4, T. 13, R. 12 W 293
" " " in drilling in S. 11, T. 14, R. 7 W 273
" " " in drilling in S. 20, T. 14, R. 7 W 274
" " " in drilling in S. 3, T. 14, R. 8 W 278
" " " in drilling in S. 6. T. 14, R. 8 W 282
" " " in drilling in S. 8 T. 14, R. 8 W 279
" " " in drilling in S. 10, T. 14, R. 8 W 278
" " " in drilling in S. 9, T. 15, R. 6 W 272
" " " in drilling in S. 16, T.15, R. 6 W 271
" " " in drilling in S. 17, T. 16, R. 2 W 261
Jagger Coal Seam in drilling near Newcastle 264
Jagger Coal Seam in Galloway Shaft No. 2 84, 292
" " " in Jefferson old shaft 78, 267
" " " in Little Basin 73, 74
" " " in McDonald Shaft 82
" " " in Morris-Goss Shaft No. 1 83
" " " in Pocahontas Shaft 82
" " " in Read Drift 84
Jagger Coal Seam in T. 13 R 8 W 80
" " " in T. 13, R. 9 W 80, 81, 83, 84
" " " in T. 13, R. 10 W 83, 84, 85
" " " in T. 14, R. 6 W 79
" " " in T. 14, R. 7 W 79, 80
" " " in T. 14, R. 8 W 77, 78, 80, 81

Jagger Coal Seam in T. 14, R. 9 W........ 81
“ “ “ in T. 15, R. 2 W........ 77
“ “ “ in T. 15, R. 3 W....... 78
“ “ “ in T. 15, R. 4 W....... 78
“ “ “ in T. 15, R. 5 W........ .... 78, 79
“ “ “ in T. 16, R. 2 W........ 77
“ “ “ in T. 16, R. 5 W.......... 78
“ “ “ in T. 19, R. 5 W.......... ....73, 74, 76, 77
“ “ “ in T. 19, R. 6 W........... 76
“ “ “ in T. 20, R. 5 W........... 73
“ “ “ in T. 20, R. 6 W............ ....73, 75, 76
Jagger Coal Seam near Carbon Hill............ 83
“ “ “ near Jasper 79
Jagger Coal Seam outcrops 73
Jasper drilling 273
Jefferson Coal Seam.......... ....9, 10, 38, 39
“ “ “ in Big Basin.... 41
“ “ “ in Brake old mine........ 46
“ “ “ in central part of Warrior Coal Field, along the Black Warrior River 48
“ “ “ in drifts at Delmar........ 54
“ “ “ in drifts at Natural Bridge...... ....., ... 54
“ “ “ in drifts in T. 10, R. 10 W...... 54
Jefferson Coal Seam in drilling at Jasper...... .... 51, 273
“ “ “ in drilling at Mary Lee.... 43
“ “ “ in drilling at Morris Station 268
“ “ “ in drilling at Patton.... 275
“ “ “ in drilling at Warrior...... ....265, 266
Jefferson Coal Seam in drilling in S. 12, T. 12, R. 9 W.................. 285
“ “ “ in drilling in S. 6, T. 12, R. 11 W................. 298
“ “ “ in drilling in S. 13, T. 12, R. 12 W................ 297
“ “ “ in drilling in S. 15, T. 12, R. 2 W 299
“ “ “ in drilling in S. 27, T. 12, R. 12 W 296, 297
“ “ “ in drilling in S. 23, T. 12, R. 12 W.................294, 296
“ “ “ in drilling in S. 34, T. 12, R. 12 W 295
“ “ “ in drilling in S. 21, T. 13, R. 8 W................. 284
“ “ “ in drilling in S. 14, T. 13, R. 10 W 290
“ “ “ in drilling in S. [illegible], T. 13, R. 10 W 290
“ “ “ in drilling in S. 10, T. 14, R. 8 W 278
“ “ “ in drilling in S. 9, T. 15, R. 6 W 272
“ “ “ in drilling in S. 17, T. 16, R. 2 W................ 263
Jefferson Coal Seam in drilling near Newcastle 44, 265
“ “ “ in eastern part of the Warrior Coal Field 44
“ “ “ in Galloway Shaft........ .... 53, 292
“ “ “ in Jefferson old shaft..... .... 46, 267
“ “ “ in Little Basin 39, 40, 41
Jefferson Coal Seam in T. 10, R. 10 W.......... 54
“ “ “ in T. 11, R. 10 W.......... 54
“ “ “ in T. 12, R. 7 W........... 50
“ “ “ in T. 12, R. 8 W........ .... 51, 52
“ “ “ in T. 12, R. 9 W........ .... 52, 54
“ “ “ in T. 12, R. 10 W......... ....53, 54, 55
“ “ “ in T. 12, R. 11 W......... ....55, 56, 57
“ “ “ in T. 12, R. 12 W......... ....56, 57, 58
“ “ “ in T. 13, R. 2 W........... 45
“ “ “ in T. 13, R. 6 W.......... 50
“ “ “ in T. 13, R. 7 W..... .... 50, 51
“ “ “ in T. 13, R. 8 W........... .... 51, 52
“ “ “ in T. 13, R. 9 W........ 53
“ “ “ in T. 13, R. 10 W........... 53
“ “ “ in T. 14, R. 2 W.......... 45
“ “ “ in T. 14, R. 3 W.......... ....45, 46, 47
“ “ “ in T. 14, R. 4 W.......... 48

Jefferson Coal Seam in T. 14, R. 5 W 48, 49
" " " in T. 14, R. 6 W 49
" " " in T. 14, R. 8 W 52
" " " in T. 15, R. 2 W 44, 45
" " " in T. 15, R. 5 W 48
" " " in T. 15, R. 6 W 49
" " " in T. 16, R. 2 W 44, 47, 48
" " " in T. 17, R. 3 W 43
" " " in T. 19, R. 5 W 40, 42
" " " in T. 19, R. 6 W 41, 42
" " " in T. 20, R. 4 W 40
" " " in T. 20, R. 5 W 39
" " " in T. 20, R. 6 W 39, 41, 42
" " " in T. 21, R. 7 W 41
Jefferson Coal Seam in Warrior Shaft 266
" " " in Watts (Fidelity) Mines 47
" " " western part of the Warrior Coal Field 55
Jefferson Coal Seam outcrops 39
Jefferson old mines (shaft) 46, 267
Jett Drifts 152
Johns Slope, No. 4 Blue Creek Mines 88, 89
Johnson Coal Seam 205, 211
" " " along Lye Branch 212
Johnson Coal Seam in Ash old mine 217
" " " in central and western parts of the Warrior Coal Field 220
Johnson Coal Seam in drilling at Brookwood 217
Johnson Coal Seam in drilling in S. 35, T. 20, R. 9 W 247
" " " in drilling in S. 2, T. 21, R. 8 W 250
" " " in drilling in S. 35, T. 21, R. 8 W 250
Johnson Coal Seam in drilling near Tuscaloosa 243
" " " in Duree New Shaft 224
" " " in Duree Old Shaft 224
Johnson Coal Seam in Hospital Shaft 224
" " " in Manly old coal bed 217
" " " in McLester old shaft 224
" " " in Milldale Slope 215
" " " in mines near Tuscaloosa 224
" " " in shaft in S. 1, T. 22, R. 8 W 252
" " " in south-east part of the Warrior Coal Field 211
Johnson Coal Seam in T. 18, R. 8 W 222
" " " in T. 19, R. 6 W 215
" " " in T. 19, R. 7 W 216
" " " in T. 19, R. 9 W 221, 222, 223
" " " in T. 20, R. 7 W 215, 216, 217
" " " in T. 20, R. 8 W 216, 217, 221
" " " in T. 20, R. 9 W 221, 222 223, 227
" " " in T. 21, R. 7 W 213
" " " in T. 21, R. 8 W 212, 213, 214, 215, 219
" " " in T. 21, R. 9 W 217, 218, 219, 220
" " " in T. 21, R. 10 W 224, 225
" " " in T. 22, R. 8 W 212

Kelley, Maj. W. J., quoted 241
Kennedy Coal Bed 75, 90
Kinds of coal 6
Koeppel, W. A. quoted 251, 253
Kyle Coal Bed (Slope) 229
Kyle Coal Seam, see Brookwood Coal Seam.

Leake, W. E. quoted 274, 276, 277

Lick Creek Coal Seam 958
“ “ “ “ at Coaldale 60
“ “ “ “ at Newcastle 60
“ “ “ “ at Old Coalbury 59
Lick Creek Coal Seam in Big Basin 59
“ “ “ “ in Brake old slope 61
Lick Creek Coal Seam in drilling at Morris Station 268
“ “ “ “ in drilling at Patton 275
“ “ “ “ in drilling at Warrior 265, 266
Lick Creek Coal Seam in drilling in S. 34, T. 12, R. 12 W 295
“ “ “ “ in drilling in S. 21, T. 13, R. 8 W 284
“ “ “ “ in drilling in S. 30, T. 13, R. 8 W 283
“ “ “ “ in drilling in S 25, T. 13, R. 9 W 284
“ “ “ “ in drilling in S. 23, T. 13, R. 10 W 290
“ “ “ “ in drilling in S. 9, T. 15, R. 6 W 272
“ “ “ “ in drilling in S. 17, T. 16, R. 2 W 262
“ “ “ “ in drilling near New Castle 265
“ “ “ “ in eastern part of the Warrior Coal Field 60
“ “ “ “ in Jefferson old shaft 61,267
“ “ “ “ in Little Basin 59
“ “ “ “ in T. 13, R. 8 W 63
“ “ “ “ in T. 13, R. 10 W 63
“ “ “ “ in T. 14, R. 2 W 60
“ “ “ “ T. 14, R. 3 W 60, 61
“ “ “ “ in T. 14, R. 5 W 62
“ “ “ “ in T. 14, R. 6 W 62, 63
“ “ “ “ in T. 14, R. 7 W 62
“ “ “ “ in T. 14, R. 8 W 62
“ “ “ “ in T. 15, R. 5 W 62
“ “ “ “ in T. 15, R. 6 W 62
“ “ “ “ in T. 16, R. 2 W 59, 60
“ “ “ “ in T. 16, R. 5 W 61, 62
“ “ “ “ in T. 19, R. 5 W 59
“ “ “ “ in T. 19, R. 6 W 59
“ “ “ “ in T. 20, R. 5 W 59
“ “ “ “ in T. 20, R. 6 W 59
“ “ “ “ in Warrior Shaft 60, 266
“ “ “ “ on Lick Creek 61
“ “ “ “ to west of T. 13, R. 8 W 63
Limestone 3
Little Basin 2, 3
Little Warrior (DeBerniere) Mines *(Drifts)* 102
Lockhart Mine (Drift) 164
Long, Col. B. M., quoted 271, 272
Long wall system 6

Mary Lee Coal Seam. (See Horse Creek Coal Seam.) .... ——
Mary Lee Mines (Shaft) 15
Mace, Mr., quoted 299
Manly old coal bed 217
McDonald's Shaft 82
McLester Coal Seam. (See Johnson Coal Seam.) .... ——
McLester Shaft 224
Milldale and Brookwood Coal Seams 230, 235
Milldale Coal Seam 205, 225
“ “ “ at Brookwood 227
“ “ “ at Milldale 226
“ “ “ in drilling in S. 35, T. 20, R. 9 W 247
“ “ “ in drilling near Tuscaloosa 243
“ “ “ in shaft in S. 1, T. 22, R. 8 W 251
“ “ “ in T. 19, R. 7 W 226

Milldale Coal Seam in T. 19, R. 8 W.......... 226
“ “ “ in T. 20, R. 7 W.......... 226, 227
“ “ “ in T. 20, R. 8 W.......... 227, 228
“ “ “ in T. 20, R. 9 W.......... 228
“ “ “ in T. 21, R. 8 W.......... 226, 227, 228
“ “ “ in T. 21, R. 9 W.......... 226, 227
“ “ “ in T. 22, R. 7 W.......... 226
“ “ “ in T. 22, R. 8 W.......... 225
“ “ “ outcrops.......... 225
Mines, coal in 14, 15, 18, 19, 20, 25, 27, 28, 31, 46, 47, 52, 53, 54, 76, 82, 83, 84, 86, 87, 88, 89, 91, 98, 99, 102, 103, 104, 107, 108, 114, 116, 126, 142, 149, 150, 151, 152, 164, 165, 190, 207, 210, 211, 224, 234, 235.
Mined, coals.......... 6
Milner, W. H., quoted.......... 23, 48, 49, 109, 264, 265
Monnish, F. W., quoted.......... 250
Morris Station drilling.......... 268
Morrow Slope.......... 99
Mt. Carmel Coal Seam. (See Horse Creek Coal Seam.).......... ——
Mountain Top Slope.......... 107
Mountain Valley Drifts Nos. 1 and 2.......... 165
Murphy Coal Seam, part of Jefferson Coal Seam.......... 9, 39, 44
Murphy Coal Seam in drilling in S. 17, T, 16, R. 2 W.......... 263
Myers, H. R., quoted.......... 292

Natural Bridge Drifts.......... 54
New Castle Coal Seam.......... 65, 66, 120
New Castle Coal Seam at New Castle.......... 122, 123
New Castle Coal Seam in Big Basin.......... 120
“ “ “ “ in Bynum Drift.......... 126
“ “ “ “ in drilling at Patton.......... 275
“ “ “ “ in drilling in S. 16, T. 12, R. 11, W.......... 298
“ “ “ “ in drilling in S. 33, T. 12, R. 12 W.......... 294
“ “ “ “ in drilling in S. 34, T. 12, R. 12 W.......... 294
“ “ “ “ in drilling in S. 34, T. 13, R. 8 W.......... 281
“ “ “ “ in drilling in S. 25, T. 13, R. 9 W.......... 283
“ “ “ “ in drilling in S. 31, T. 13, R. 9 W.......... 288
“ “ “ “ in drilling in S. 32, T. 13, R. 9 W.......... 286
“ “ “ “ in drilling in S. 13, T. 13, R. 10 W.......... 289, 291
“ “ “ “ in drilling in S. 3, T. 13, R. 12 W.......... 293
“ “ “ “ in drilling in S. 4, T. 13, R. 12 W.......... 293
“ “ “ “ in drilling in S. 6, T. 14, R. 8 W.......... 282
“ “ “ “ in drilling in S. 10, T. 14, R. 8 W.......... 277
“ “ “ “ in drilling in S. 16, T. 15, R. 7 W.......... 271
“ “ “ “ in drilling near Gamble Mines.......... 279, 280
“ “ “ “ in drilling near New Castle.......... 264
New Castle Coal Seam in its southeast outcrops.......... 120
New Castle Coal Seam in Little Basin.......... 120
New Castle Coal Seam near Carbon Hill.......... 126
New Castle drillings.......... 44, 264
New Castle Mines (Slope).......... 15
New Coal Valley Mines (Drifts).......... 163
Number of Coal Seams.......... 4
New Castle Coal Seam in T. 13, R. 8 W.......... 124, 125
“ “ “ “ in T. 13, R. 9 W.......... 125, 126, 127
“ “ “ “ in T. 13, R. 10 W.......... 126, 127
“ “ “ “ in T. 14, R. 8 W.......... 124, 125
“ “ “ “ in T. 14, R. 9 W.......... 125
“ “ “ “ in T. 15, R. 2 W.......... 123
“ “ “ “ in T. 15, R. 3 W.......... 123, 124
“ “ “ “ in T. 15, R. 4 W.......... 124
“ “ “ “ in T. 15, R. 6 W.......... 124
“ “ “ “ in T. 16, R. 2 W.......... 122, 123

Newcastle Coal Seam in T. 16, R. 3 W 122
" " " " in T. 16, R. 6 W.... 124
" " " " in T. 17, R. 3 W.... 121, 122
" " " " in T. 19, R. 5 W.... 121
" " " " in T. 20, R. 6 W.... 120, 121

Oakman Drifts.... 162
Old Coal Valley Drifts.... 162
Ore, black band.... 3, 9, 18, 19, 38; 39, 65, 97
Outcrops of American Coal Seam.... 13
" " Black Creek Coal Seam.... 11
" " Blue Creek Coal Seam.... 85
" Brookwood Coal Seam.... 229
" " Clements Coal Seam.... 206
" " Cobb Lower Coal Seam.... 174
" " Cobb Upper Coal Seam.... 178
" " Curry Coal Seam.... 131
" " Fire Clay (Cardiff) Coal Seam.... 144
" " Gillespie Coal Seam.... 130
" " Guide Coal Seam.... 241
" " Gwin Coal Seam.... 193
" " Horse Creek (Mary Lee) Coal Seam.... 97
" " Jagger Coal Seam.... 73
" " Jefferson Coal Seam.... 39
" " Johnson Coal Seam.... 211
" " Lick Creek Coal Seam.... 59
" " Milldale Coal Seam.... 225
" " New Castle Coal Seam.... 120
" " Pratt Coal Seam.... 148
" " Ream Coal Seam.... 67
" " Thomas (Frierson) Coal Seam.... 170
" " Thompson Mill Coal Seam.... 184
Output, coal.... 6
" coke.... 6
" of the American Coal Seam.... 133
" of the Brookwood Coal Seam.... 229
" of the Black Creek Coal Seam.... 11
" of the Blue Creek Coal Seam.... 85
" of the Clements Coal Seam.... 206
" of the Horse Creek (Mary Lee) Coal Seam.... 96
" of the Jagger Coal Seam.... 73
" of the Jefferson Coal Seam.... 39
" of the Johnson Coal Seam.... 211
" of the Milldale Coal Seam.... 225
" of the Pratt Coal Seam.... 148
" of the Pratt Group.... 130

Palos Mines.... 103, 104
Patton Coal Seam. (See Corona Coal Seam.).... ——
Patton drilling.... 164
Paving stones.... 7
Peacock Mines (Drifts).... 162
Perkins Coal Seam. (See Brookwood Coal Seam.).... ——
Persimmon Lick Drift.... 142
Pierce, Jas. T., quoted.... 267
Pierce old drifts.... 18
Pillar and stall method.... 6
Plank rocks.... 7
Pocahontas Shaft.... 82
Potter's clay.... 7

Pratt Coal Group.......... 4, 129
Pratt Coal Seam.......... 129, 130, 147, 148
Pratt and Fire Clay (Cardiff) Coal Seams together.......... 163, 164
Pratt Coal Seam at Brown's Mine.......... 15
“ “ “ at Double Falls.......... 160
“ “ “ in Brazil Mines (Drfts).......... 152
“ “ “ in Blossburg Mines (Drifts and Slopes).......... 153
“ “ “ in Cardiff Drifts.......... 152
“ “ “ in central part of the Warrior Coal Field.......... 157
“ “ “ in Coalburg Drifts.......... 151
“ “ “ in Days Gap.......... 161
“ “ “ in drifts near Oakman.......... 162
“ “ “ in drilling at Fayette, C. H.......... 299
“ “ “ in drilling at Sulphur Spring Church.......... 150, 254
“ “ “ in drilling between Blossburg and Adamsville.......... 154, 269
“ “ “ in drilling on Camp Branch.......... 258
“ “ “ in drilling on head of Camp Branch.......... 149, 257
“ “ “ in drilling one mile south of Coalburg.......... 151, 261
“ “ “ in drilling on Camp Branch.......... 258
“ “ “ in drilling on head of Camp Branch.......... 149, 257
“ “ “ in drilling one mile south of Coalburg.......... 151, 260
“ “ “ in Dolomite Mines (Slope).......... 149
“ “ “ in Dudley old slope.......... 149
“ “ “ in eastern part of the Warrior Coal Field.......... 148
“ “ “ in Jett Mine (Drift).......... 152
“ “ “ in S. 35, T. 17, R. 4 W.......... 259
“ “ “ in T. 14, R. 9 W.......... 165, 166
“ “ “ in T. 14, R. 10 W.......... 166 167
“ “ “ in T. 14, R. 11 W.......... 166
“ “ “ in T. 15, R. 6 W.......... 159, 165
“ “ “ in T. 15, R. 7 W.......... 159, 160
“ “ “ in T. 15 R. 8 W.......... 160, 161, 162, 163, 165
“ “ “ in T. 15, R. 9 W.......... 163, 164, 165
“ “ “ in T. 15, R. 10 W.......... 167
“ “ “ in T. 15, R. 12 W.......... 166
“ “ “ in T. 16, R. 3 W.......... 151, 152
“ “ “ in T. 16, R. 4 W.......... 149, 152, 153, 154, 155
“ “ “ in T. 16, R. 5 W.......... 154, 155
“ “ “ in T. 16, R. 6 W.......... 156, 157, 159
“ “ “ in T. 16, R. 7 W.......... 158, 159, 160
“ “ “ in T. 16, R. 8 W.......... 161
“ “ “ in T. 17, R. 3 W.......... 150, 151
“ “ “ in T. 17, R. 5 W.......... 155
“ “ “ in T. 17, R. 6 W.......... 155, 156
“ “ “ inn T. 18, R. 4 W.......... 149
“ “ “ in T. 18 R. 6 W.......... 155, 156
“ “ “ in T. 19, R. 5 W.......... 149
“ “ “ in T. 21, R. 7 W.......... 149
“ “ “ in Slope No. 1, Pratt Mines.......... 150
“ “ “ in Slope No. 2, Pratt Mines.......... 150
“ “ “ in Slope No. 3, Pratt Mines.......... 150
“ “ “ in Slope No. 4, Blossburg.......... 154
“ “ “ in Van Hoose Lower Drift.......... 158
“ “ “ in Van Hoose Upper Drift.......... 158
“ “ “ outcrops.......... 148
Pratt Mines Drifts.......... 150
Pratt Mines Slopes.......... 150, 154
Price Mines.......... 108
Prude Coal Seam. (See Clements Coal Seam.).......... ——
Prude Lower Mines (Drifts).......... 210
Prude Upper Mines (Drifts).......... 210

Purvis (Fuller) Drift 27, 31

Ramsay, Erskine, quoted 247, 259, 260, 269
Read Drift No. 1 184
Ream Coal Seam 65, 63
" " " in drilling at Jasper 273
" " " in drilling at Morris Station 268
" " " in drilling at Patton 275
" " " in drilling in S. 11, T. 12, R. 9 W 285
" " " in drilling in S. 34, T. 12, R. 12 W 295
" " " in drilling in S. 21, T. 13, R. 8 W 284
" " " in drilling in S. 30, T. 13, R. 8 W 283
" " " in drilling in S. 25, T. 13, R. 9 W 284
" " " in drilling in S. 35, T. 13, R. 9 W 287
" " " in drilling in S. 14, T. 13, R. 10 W 290
" " " in drilling in S. 23, T. 13, R. 10 W 290
" " " in drilling in S, 3. T. 14, R. 8 W 278
" " " in drilling in S. 9, T. 15, R. 6 W 272
" " " in drilling in S. 17, T. 16, R. 2 W 262
Ream Coal Seam in drilling in eastern part of Warrior Coal Field 68
" " " in drilling near Newcastle 264
Ream Coal Seam in Galloway Shaft 292
" " " in Jefferson old shaft 69, 267
Ream Coal Seam outcrops 67
" " " outcrops to north-east of Morris 69
Ream Coal Seam in T. 12, R 10 W 72
" " " in T. 12, R 11 W 72
" " " in T. 12, R. 12 W 72, 73
" " " in T. 13, R. 8 W 71
" " " in T. 13, R. 9 W 71
" " " in T. 14, R. 3 W 69
" " " in T. 14, R. 7 W 70
" " " in T. 14, R. 8 W 70
" " " in T. 14, R. 9 W 71
" " " in T. 15, R. 2 W 91
" " " in T. 15, R. 3 W 69
" " " in T. 15, R. 5 W 70
" " " in T. 15, R. 6 W 70
" " " in T. 15, R. 9 W 72
" " " in T. 16, R. 2 W 69
" " " in T. 16, R. 5 W 69, 70
River, Black Warrior 2, 7
Rocks, plank 7

School-house Mine 31
Seymour's notes, Capt., quoted 288, 289, 292
Shafts, coal in 20, 46, 53, 76, 78, 82, 83, 84, 84, 89, 9 , 98, 99, 103, 104, 107, 108, 133, 149, 150
154, 164, 208, 215, 229.
Smith's old slope 164
Snake (Black Diamond) Slope 98
Squaw Shoals drilling 249
State Geological Reports, quoted 256, 258, 266, 268
Stockton Drifts 151
Stones, building 7
" curbing 7
" paving 7
Stout Mountain coals 31, 32
Sulphur Coal Seam, (see Jagger Coal Seam) ————
Sulphur Spring Church drilling 254

Tennessee (Valcan) Mines (Slope)........ 98, 99
Thickness of coals 5, 6
" of strata in Warrior Coal Basin........ 2, 4
Thomas Coal Bed 172
Thomas (Frierson) Coal Seam 169, 170
Thomas Coal Seam in Frierson old mine........ 171
Thomas (Frierson) Coal Seam in central part of Warrior Coal Field, along the Black Warrior River........ 171
Thomas (Frierson) Coal Seam in Coal Cave Hollow 171
" " " " in drilling at Sulphur Spring Church 254
" " " " in drilling between Blossburg and Adamsville 269
" " " " in drilling near Ensley 170
Thomas (Frierson) Coal Seam in Gould old on Camp Branch 258
" " " " in drilling slope........ 170
" " " " in T. 15, R. 9 W 173
" " " " in T. 15, R. 10 W 173
" " " " in T. 16, R. 7 W 172
" " " " in T. 16, R. 8 W 172, 173
" " " " in T. 16, R. 9 W 173
" " " " in T. 17, R. 5 W 170
" " " " in T. 17, R. 6 W 171
" " " " in T. 17, R. 7 W 171, 172
" " " " in T. 17, R. 8 W 173
" " " " in T. 18, R. 6 W 170, 171
" " " " in T. 18, R. 7 W 171
" " " in T. 21, R. 7 W 170
Thomas (Frierson) Coal Seam outcrops........ 170
Thompson Mill Coal Seam 183
Thompson Mill Coal Seam at Hagler's Mill........ 191, 192
" " " " at Thompson's Mill on Davis Creek 187
Thompson Mill Coal Seam in drilling at foot of Squaw Shoals 249
" " " " in drilling in S. 30, T. 20, R. 8 W 249
" " " " in drilling in S. 5, T. 21, R. 9 W 246
Thompson Mill Coal in drilling near Tuscaloosa 244
" " " " in drilling on Bluff Creek 249
Thomas Mill Coal Seam in T. 16, R. 9 W........ 188, 189
Thompson Mill Coal Seam in T. 16, R. 10 W........ 189
" " " " in T. 17, R. 8 W........ 187, 188
" " " " in T. 17, R. 9 W........ 189
" " " " in T. 17, R. 10 W........ 189, 190
" " " " in T. 18, R. 4 W........ 184
" " " " in T. 18, R. 5 W........ 185
" " " " in T. 18, R. 7 W........ 185
" " " " in T. 18, R. 8 W........185, 186, 187, 190
" " " " in T. 18, R. 9 W........187, 189, 190, 191
" " " " in T. 18, R. 10 W........ 190, 191
" " " " in T. 19, R. 6 W........ 184, 185
" " " " in T. 19, R. 7 W........ 184, 186
" " " " in T. 19, R. 8 ....186, 187, 192, 193
" " " " in T. 20, R. 6 W........ 184
" " " " in T. 20, R. 7. W........ 184
" " " " in T. 20, R. 8 W........ 192
" " " " in T. 21, R. 9 W........ 193
" " " " in T. 21, R. 10 W........ 193
Thompson Mill Coal Seam in Utley Drift........ 190
Thompson Mill Coal Seam outcrops........ 184
Thrasher Coal Bed 165
Tidewater Coal Seam, see Brookwood Coal Seam.
Tiles 7
Transportation facilities of the Warrior Coal Basin 7
Transverse faults 3

T. 10 R. 10, W, Black Creek Coal Seam in 38
T. 10, R. 10 W, Jefferson Coal Seam in 54
T. 11, R. 4 W, Black Creek Coal Seam in 32
T. 11, R. 5 W, " " " " in 29
T. 11, R. 8 W, " " " " in 35
T. 11, R. 10 W " " " " in 37, 38
T. 11, R. 10 W, Jefferson Coal Seam in 54
T. 12, R. 3 W, Black Creek Coal Seam in 26, 27, 31, 32
T. 12, R. 4 W, Black Creek Coal Seam in 26, 27, 28, 29, 32
T. 12, R. 5 W, " " " " in 29, 31, 32
T. 12, R. 6 W, " " " " in 29, 35
T. 12, R. 7 W, " " " " in 35
T. 12, R. 7 W, Jefferson Coal Seam in 50
T. 12, R. 8 W, Black Creek Coal Seam in 35, 36
T. 12, R. 8 W, Jefferson Coal Seam in 51, 52
T. 12, R. 9 W, Black Creek Coal Seam in 36, 37
T. 12, R. 9 W, Jefferson Coal Seam in 52, 54
T. 12, R. 10 W, Black Creek Coal Seam in 37, 38
T. 12, R. 10 W, Jefferson Coal Seam in 53, 54, 55
T. 12, R. 10 W, Ream Coal Seam in 72
T. 12, R. 11 W, Black Creek Coal Seam in 37, 38
T. 12, R. 11 W, Blue Creek Coal Seam in 90
T. 12, R. 11 W, Jefferson Coal Seam in 55, 56, 57
T. 12, R. 11 W, Ream Coal Seam in 72
T. 12, R. 12 W, Black Creek Coal Seam in 38
T. 12, R. 12 W, Jefferson Coal Seam in 56, 57, 58
T. 12, R. 12 W, Ream Coal Seam in 72, 73
T. 13, R. 1 W, Black Creek Coal Seam in 17
T. 13, R. 2 W, " " " " in 17, 18
T. 13, R. 2 W, Jefferson Coal Seam in 45
T 13, R. 4 W, Black Creeek Coal Seam in 25, 26, 31
T. 13, R. 5 W, " " " " in 23, 29, 30, 31
T. 13, R. 6 W, " " " " in 33, 34, 35
T. 13, R. 6 W, Jefferson Coal Seam in 49, 50
T. 13, R. 7 W, Black Creek Coal Seam in 34, 35
T. 12, R. 7 W, Jefferson Coal Seam in 50, 51
T. 13, R. 8 W, Black Creek Coal Seam in 36
T. 13, R. 8 W, Blue Creek Coal Seam in 93, 94
T. 13, R. 8 W, Horse Creek (Mary Lee) Coal Seam in 116, 117, 119
T. 13, R. 8 W, Jagger Coal Seam in 80
T. 13, R. 8 W, Jefferson Coal Seam in 51, 52
T. 13 R. 8 W, Lick Creek Coal Seam in 63
T. 13, R. 8 W, Newcastle Coal Seam in 124, 125
T. 13, R. 8 W, Ream Coal Seam in 71
T. 13, R. 9 W, Blue Creek Coal Seam in 94, 95
T. 13, R. 9 W, Jagger Coal Seam in 80, 81, 83, 84
T. 13, R. 9 W, Jefferson Coal Seam in 53
T. 13, R. 9 W, Newcastle Coal Seam in 125, 126, 127
T. 13, R. 9 W, Ream Coal Seam in 71
T. 13, R. 10 W, Black Creek Coal Seam in 37
T. 13, R. 10 W, Blue Creek Coal Seam in 94, 95, 96
T. 13, R. 10 W, Horse Creek (Mary Lee) Coal Seam in 119
T. 13, R. 10 W, Jagger Coal Seam in 83, 84, 85
T. 13, R. 10 W, Jefferson Coal Seam in 53
T. 13, R. 10 W, Lick Creek Coal Seam in 53
T. 13, R. 10 W, Newcastle Coal Seam in 126, 127
T. 14, R. 1 W, Black Creek Coal Seam in 16
T. 14, R. 2 W, " " " " in 16, 17, 18, 20
T. 14, R. 2 W, Jefferson Coal Seam in 45
T. 14, R. 2 W, Lick Creek Coal Seam in 60
T. 14, R. 3 W, Black Creek Coal Seam in 18, 19, 20

T. 14, R. 3 W, Jagger Coal Seam in 45, 46, 47
T. 14, R. 3 W, Lick Creek Coal Seam in 60, 61
T. 14, R. 3 W, Ream Coal Seam in 69
T. 14, R. 4 W, Black Creek Coal Seam in 22, 23
T. 14, R. 4 W, Jefferson Coal Seam in 48
T. 14, R. 5 W, Black Creek Coal Seam in 22, 23, 24, 25, 30, 33
T. 14, R. 5 W, Horse Creek (Mary Lee) Coal Seam in 109
T. 14, R. 5 W, Jefferson Coal Seam in 48, 49
T. 14, R. 5 W, Lick Creek Coal Seam in 62
T 14, R. 6 W, Black Creek Coal Seam in 33, 34
T. 14, R. 6 W, Blue Creek Coal Seam in 93
T. 14, R. 6 W, Horse Creek (Mary Lee) Coal Seam in 109, 111, 112
T. 14, R. 6 W, Jagger Coal Seam in 79
T. 14, R. 6 W, Jefferson Coal Seam in 49
T. 14, R. 6 W, Lick Creek Coal Seam in 62, 63
T. 14, R. 7 W, Blue Creek Coal Seam in 93
T. 14, R. 7 W, Horse Creek (Mary Lee) Coal Seam in 114, 115, 116
T. 14, R. 7 W., Jagger Coal Seam in 79 80
T. 14, R. 7 W, Jefferson Coal Seam in 51
T. 14, R. 7 W, Lick Creek Coal Seam in 62
T. 14, R. 7 W, Ream Coal Seam in 70
T. 14, R. 8 W, Blue Creek Coal Seam in 94
T. 14, R. 8 W, Horse Creek (Mary Lee) Coal Seam in 115, 116, 117, 118
T. 14, R. 8 W, Jagger Coal Seam in 80, 81
T. 14, R. 8 W, Jefferson Coal Seam in 52
T. 14, R. 8 W, Lick Creek Coal Seam in 62
T. 14, R. 8, W., Newcastle Coal Seam in 124, 125
T. 14, R. 8 W Ream Coal Seam in 70
T. 14, R. 9 W., Black Creek Coal Seam in 23
T. 14, R. 9 W., Horse Creek (Mary Lee) Coal Seam in 118, 119
T. 14, R. 9 W., Jagger Coal Seam in 81
T. 14, R. 9 W., Newcastle Coal Seam in 124, 125
T. 14, R. 9 W., Pratt Coal Seam in 165, 166
T. 14, R. 9 W., Ream Coal Seam in 71
T. 14, R. 10 W., Pratt Coal Seam in 166, 167
T. 14, R. 11 W., Pratt Coal Seam in 166
T. 15, R. 2 W., Black Creek Coal Seam in 15, 16
T. 15, R. 2 W., Blue Creek Coal Seam in 91, 92
T. 15, R. 2 W., Horse Creek (Mary Lee) Coal Seam in 100
T. 15, R. 2 W., Jefferson Coal Seam in 44, 45
T. 15, R. 2 W.. Newcastle Coal Seam in 123
T. 15, R. 2 W., Ream Coal Seam in 69
T. 15, R. 3 W., American Coal Seam in 135
T. 15, R. 3 W., Blue Creek Coal Seam in 92, 93
T. 15, R. 3 W., Curry Coal Seam in 132
T. 15, R. 3 W., Gillespie Coal Seam in 131
T. 15, R. 3 W., Horse Creek (Mary Lee) Coal Seam 100, 101
T. 15, R. 3 W., Jasper Coal Seam in 78
T. 15, R. 3 W., Newcastle Coal Seam in 123, 124
T. 15, R. 3 W., Ream Coal Seam in 69
T. 15, R. 4 W., Black Creek Coal Seam in 22
T. 15, R. 4 W., Horse Creek (Mary Lee) Coal Seam in 101, 107
T. 15, R. 4 W., Jasper Coal Seam in 78
T. 15, R. 4 W., Newcastle Coal Seam in 124
T. 15, R. 5 W., American Coal Seam in 135
T. 15, R. 5 W., Black Creek Coal Seam in 20, 21, 22, 24
T. 15, R. 5 W., Blue Creek Coal Seam in 93
T. 15, R. 5 W., Horse Creek (Mary Lee) Coal Seam in 107, 108
T. 15, R. 5 W., Jagger Coal Seam in 78, 79
T. 15, R. 5 W., Jefferson Coal Seam in 48
T. 15, R. 5 W., Ream Coal Seam in 70

T. 15, R. 6 W., American Coal Seam in.... 141
T. 15, R. 6 W., Black Creek Coal Seam in.... 30
T. 15, R. 6 W., Fire Clay (Cardiff) Coal Seam in.... 146
T. 15, R. 6 W., Horse Creek (Mary Lee) Coal Seam in 106, 107, 110, 111, 112, 113; 114
T. 15, R. 6 W., Jefferson Coal Seam in.... 49
T. 15, R. 6 W., Lick Creek Coal Seam in.... 62
T. 15, R. 6 W., Newcastle Coal Seam in.... 124
T. 15, R. 6 W., Pratt Coal Seam in....159, 165
T. 15, R. 6 W., Ream Coal Seam in.... 70
T. 15, R. 7 W., American Coal Seam in....141, 142
T. 15, R. 7 W., Fire Clay (Cardiff) Coal Seam in.... 146
T. 15, R. 7 W., Horse Creek (Mary Lee) Coal Seam in.... 114
T. 15, R. 7 W., Pratt Coal Seam in....159, 160
T. 15, R. 8 W., American Coal Seam in....142, 143
T. 15, R. 8 W., Fire Clay (Cardiff) Coal Seam in....146, 147, 148
T. 15, R. 8 W., Pratt Coal Seam in....160, 162, 163, 165
T. 15, R. 9 W., Cobb Upper Coal Seam in.... 180
T. 15, R. 9 W., Fire Clay (Cardiff) Coal Seam in.... 147
T. 15, R. 9 W., Pratt Coal Seam in 163, 164, 165
T. 15, R. 9 W., Ream Coal Seam in.... 72
T. 15, R. 9 W., Thomas (Frierson) Coal Seam in 178
T. 15, R. 10 W., Cobb Lower Coal Seam in.... 178
T. 15, R. 10 W., Pratt Coal Seam in.... 167
T. 15, R. 10 W., Thomas (Frierson) Coal Seam in.... 173
T. 15, R. 11 W., Cobb Lower Coal Seam in.... 178
T. 15, R. 11 W., Cobb Upper Coal Seam in.... 181
T 15, R. 12 W., Cobb Upper Coal Seam in.... 181
T. 15, R. 12, W. Pratt Coal Seam in.... 166
T. 16, R. 2 W., Black Creek Coal Seam in.... 15
T. 16, R. 2 W., Blue Creek Coal Seam in.... 91
T. 16, R. 2 W., Curry Creek Coal Seam in.... 132
T. 16, R. 2 W., Horse Creek (Mary Lee) Coal Seam in.... 99, 100
T. 16, R. 2 W., Jagger Coal Seam in.... 77
T. 16, R. 2 W., Jefferson Coal Seam in.... 43, 44
T. 16, R. 2 W., Lick Creek Coal Seam in.... 59, 60
T. 16, R. 2 W., Newcastle Coal Seam in....122, 123
T. 16, R. 2 W., Ream Coal Seam in.... 69
T. 16, R. 3 W., American Coal Seam in....134, 135
T. 16, R. 3 W., Curry Coal Seam in....131, 132
T. 16, R. 3 W., Newcastle Coal Seam in.... 122
T. 16 R. 3 W., Pratt Coal Seam in....151, 152
T. 16, R. 4 W., American Coal Seam in.... 135
T. 16, R. 4 W., Curry Coal Seam in.... 132
T. 16, R. 4 W., Fire Clay (Cardiff) Coal Seam in 144
T. 16, R. 4 W., Gillespie Coal Seam in.... 131
T. 16, R. 4 W., Horse Creek (Mary Lee) Coal seam in.... 102
T. 16, R. 4 W., Pratt Coal Seam in....149, 152, 153, 154, 155
T. 16, R. 5 W., American Coal Seam in....135, 136
T. 16, R. 5 W., Black Creek Coal Seam in.... 20, 21
T. 16, R. 5 W., Fire Clay (Cardiff) Coal Seam in.... 145
T. 16, R. 5 W., Gillespie Coal Seam in.... 131
T. 16, R. 5 W., Horse Creek (Mary Lee) Coal Seam in....102, 103, 104, 106
T. 16, R. 5 W., Jagger Coal Seam in.... 178
T. 16, R. 5 W., Jefferson Coal Seam in.... 47, 48
T. 16, R. 5 W., Lick Creek Coal Seam in.... 61, 62
T. 16, R. 5 W., Pratt Coal Seam in....154, 155
T. 16, R. 5 W., Ream Coal Seam in.... 69, 70
T. 16, R. 6 W., American Coal Seam in....139, 140, 141
T. 16, R. 6 W., Fire Clay (Cardiff) Coal Seam in.... 146
T. 16, R. 6 W., Horse Creek (Mary Lee) Coal Seam in....105, 107
T. 16, R. 6 W., Newcastle Coal Seam in.... 124

T. 16, R. 6 W., Pratt Coal Seam in........156, 157, 159
T. 16, R. 7 W., American Coal Seam in........140, 142
T. 16, R. 7 W., Fire Clay (Cardiff) Coal Seam in........ 146
T. 16, R. 7 W., Pratt Coal Seam in........158, 159, 160
T. 16, R. 7 W., Thomas (Frierson) Coal Seam in........ 172
T. 16, R. 8 W., Cobb Upper Coal Seam in........ 180
T. 16, R. 8 W., Fire Clay (Cardiff) Coal Seam in........ 147
T. 16, R. 8 W., Horse Creek (Mary Lee) Coal Seam in........ 106
T. 16, R. 8 W., Pratt Coal Seam in........ 161
T. 16, R. 8 W., Thomas (Frierson) Coal Seam in........172, 173
T. 16, R. 9 W., Thomas (Frierson) Coal Seam in........ 173
T. 16, R. 9 W., Thompson Mill Coal Seam in........188, 189
T. 16, R. 10 W., Cobb Lower Coal Seam in........ 178
T. 16, R. 10 W., Cobb Upper Coal Seam in........ 181
T. 16, R. 10 W., Thompson Mill Coal Seam in........ 189
T. 16, R. 11 W., Cobb Upper Coal Seam in........ 181
T. 16, R. 12 W., Cobb Lower Coal Seam in........ 178
T. 17, R. 7 W., Black Creek Coal Seam in........ 14, 15
T. 17, R. 7 W., Cobb Lower Coal Seam in........ 175
T. 17, R. 7 W., Horse Creek (Mary Lee) Coal Seam in........98, 99, 104, 105
T. 17, R. 7 W., Jefferson Coal Seam in........ 43
T. 17, R. 7 W., Newcastle Coal Seam in........121, 122
T. 17, R. 7 W., Pratt Coal Seam in........150, 151
T. 17, R. 4 W., American Coal Seam in........ 134
T. 17, R. 4 W., Cobb Lower Coal Seam in........ 175
T. 17, R. 4 W., Cobb Upper Coal Seam in........ 179
T. 17, R. 4 W., Fire Clay (Cardiff) Coal Seam in........ 144
T. 17, R. 5 W., American Coal Seam in........136, 137
T 17, R. 5 W., Cobb Lower Coal Seam in........ 176
T. 17, R. 5 W., Cobb Upper Coal Seam in........ 179
T. 17, R. 5 W., Curry Coal Seam in........ 132
T. 17, R. 5 W., Fire Clay (Cardiff) Coal Seam in........ 145
T 17, R. 5 W., Pratt Coal Seam in........ 155
T. 17, R. 5 W., Thomas (Frierson) Coal Seam in........ 170
T 17, R. 6 W., American Coal Seam in........137, 138, 139
T. 17, R. 6 W., Blue Creek Coal Seam in........ 93
T. 17, R. 6 W., Gillespie Coal Seam in........ 131
T. 17, R. 6 W., Fire Clay (Cardiff) Coal Seam in........ 145
T. 17, R. 6 W., Horse Creek (Mary Lee) Coal Seam in........ 105
T. 17, R. 6 W., Pratt Coal Seam in........155, 156
T. 17, R. 6 W., Thomas (Frierson) Coal Seam in........ 171
T. 17, R. 7 W., Cobb Lower Coal Seam in........ 177
T. 17, R. 7 W., Cobb Upper Coal Seam in........ 180
T. 17, R. 7 W., Thomas (Frierson) Coal Seam in........171, 172
T. 17 R. 8 W., Cobb Upper Coal Seam in........ 180
T. 17, R. 8 W., Gwin Coal Seam in........ 200
T. 17, R. 8 W., Thomas (Frierson) Coal Seam in........ 173
T. 17, R. 8 W., Thompson Mill Coal Seam in........187, 188
T. 17, R. 9 W., Thompson Mill Coal Seam in........ 189
T. 17, R. 10 W., Thompson Mill Coal Seam in........189, 190
T. 18, R. 4 W., American Coal Seam in........ 133
T. 18, R. 4 W., Cobb Lower Coal Seam in........ 175
T. 18, R. 4 W., Cobb Upper Coal Seam in........ 179
T. 18, R. 4 W., Fire Clay (Cardiff) Coal Seam in........ 144
T. 18, R. 4 W., Pratt Coal Seam in........ 149
T. 18, R. 4 W., Thompson Mill Coal Seam in........ 184
T. 18, R. 5 W., Brookwood Coal Seam in........ 231
T. 18, R. 5 W., Cobb Lower Coal Seam in........ 176
T. 18, R. 5 W., Cobb Upper Coal Seam in........ 179
T. 18, R. 5 W., Gwin Coal Seam in........ 195
T. 18, R. 5 W., Thompson Mill Coal Seam in........ 185

T. 18, R. 6 W., Cobb Lower Coal Seam in ... 176
T. 18, R. 6 W., Cobb Upper Coal Seam in ... 179
T. 18, R. 6 W., Gwin Coal Seam in ... 195, 196, 197, 198
T. 18, R. 6 W., Pratt Coal Seam in ... 155, 156
T. 18, R. 6 W., Thomas (Frierson) Coal Seam in ... 170, 171
T. 18, R. 7 W., Cobb Lower Coal Seam in ... 177
T. 18, R. 7 W., Gwin Coal Seam in ... 198, 199, 200
T. 18, R. 7 W., Thomas (Frierson) Coal Seam in ... 171
T. 18, R. 7 W., Thompson Mill Coal Seamin ... 185
T. 18, R. 8 W., Gwin Coal Seam in ... 199, 200
T 18, R. 8 W., Johnson Coal Seam in ... 222
T. 18, R. 8 W., Thompson Mill Coal Seamin ... 185, 186, 187, 190
T. 18, R. 9 W., Gwin Coal Seam in ... 200, 201, 202
T. 18, R. 9 W., Thompson Mill Coal Seamin ... 187, 189, 190, 191
T. 18, R. 10 W., Gwin Coal Seam in ... 201
T. 18, R. 10 W., Thompson Mill Coal Seamin ... 190, 191
T. 19, R. 5 W., American Coal Seam in ... 138
T. 19, R. 5 W., Black Creek Coal Seam in ... 11, 12, 14
T. 19, R. 5 W., Blue Creek Coal Seam in ... 86, 87, 88, 91
T. 19, R. 5 W., Cobb Lower Coal Seam in ... 175
T. 19, R. 5 W., Cobb Upper Coal Seam in ... 179
T. 19, R. 5 W., Fire Clay (Cardiff) Coal Seam in ... 144
T. 19, R. 5 W., Gwin Coal Seam in ... 195
T. 19,R. 5 W., Horse Creek (Mary Lee) Coal Seam in ... 97, 98
T. 19, R. 5 W., Jagger Coal Seam in ... 73, 74, 76, 77
T. 19, R. 5 W., Jefferson Coal Seam in ... 40, 42
T. 19, R. 5 W.. Lick Creek Coal Seam in ... 59
T. 19, R. 5 W., Newcastle Coal Seam in ... 121
T. 19, R. 5 W., Pratt Coal Seam in ... 149
T. 19, R. 6 W., Black Creek Coal Seam in ... 12, 13
T. 19, R. 6 W., Blue Creek Coal Seam in ... 88, 89, 91
T. 19, R. 6 W., Brookwood Creek Coal Seam in ... 231
T. 19, R. 6 W, Gwin Coal Seam in ... 194, 196, 197
T. 19, R. 6 W., Horse Creek (Mary Lee) Coal Seam in ... 98
T. 19, R. 6 W. Jagger Coal Seam in ... 76
T. 19, R. 6 W.. Jefferson Coal Seam in ... 41, 42
T. 19, R. 6 W., Johnson Coal Seam in ... 215
T. 19, R. 6 W., Lick Coal Seam in ... 59
T. 19, R. 6 W., Thompson Mill Coal Seam in ... 184, 185
T. 19, R. 7 W., Brookwood Coal Seam in ... 232, 233
T. 19, R. 7 W., Gwin Coal Seam in ... 194, 190
T. 19, R. 7 W., Johnson Coal Seam in ... 216
T. 19, R. 7 W., Milldale Coal Seam in ... 226
T. 19. R. 7 W., Thompson Mill Coal Seam ... 184, 186
T. 19, R. 8 W., Brookwood Coal Seam in ... 233
T 19, R. 8 W., Milldale Coal Seam in ... 226
T 19, R. 8 W., Gwin Coal Seam in ... 203
T 19. R. 8 W., Thompson Mill Coal Seam in ... 186, 187, 192 193
T. 19, R. 9 W., Johnson Coal Seam in ... 221, 222, 223
T. 19, R. 10 W., Gwin Coal Seam in ... 201, 202, 203
T. 19, R. 10 W., Thompson Mill Coal Seam in ... 191, 192
T. 20, R. 4 W., Jefferson Coal Seam in ... 40
T. 20, R. 5 W., Jagger Coal Seam in ... 73
T. 20, R. 5 W.,Jefferson Coal Seam in ... 39
T. 20, R. 5 W., Lick Creek Coal Seam in ... 59
T. 20, R. 6 W., Black Creek Coal Seam in ... 11, 12, 13
T. 20, R. 6 W., Blue Creek Coal Seam in ... ,89, 90
T. 20, R. 6 W., Gwin Coal Seam in ... 194
T. 20, R. 6 W., Horse Creek (Mary Lee) Coal Seam in ... 97
T. 20, R. 6 W., Jagger Coal Seam in ... 73, 75, 76

T. 20, R. 6 W., Jefferson Coal Seam in 39, 41, 42
T. 20, R. 6 W., Lick Creek Coal Seam in 59
T. 20, R. 6 W., Newcastle Coal Seam in 120, 121
T. 20, R. 6 W., Thompson Mill Coal Seam in 184
T. 20, R. 7 W., Brookwood Coal Seam in 230, 231, 234
T. 20, R. 7 W., Clements Coal Seam in 209
T. 20, R. 7 W., Cobb Lower Coal Seam in 175
T. 20, R. 7 W., Fire Clay (Cardiff) Coal Seam in 144
T. 20, R. 7 W., Guide Coal Seam in 241
T. 20, R. 7 W., Gwin Coal Seam in 194
T. 20, R. 7 W., Johnson Coal Seam in 215, 216, 217, 223, 224
T. 20, R. 7 W., Milldale Coal Seam in 226, 227
T. 20, R. 7 W., Thompson Mill Coal Seam in 184
T. 20, R. 8 W., Brookwood Coal Seam in 233, 234, 235
T. 20, R. 8 W., Clements Coal Seam in 209
T. 20, R. 8 W.,Gwin Coal Seam in 202, 203
T. 20, R. 8 W., Johnson Coal Seam in 216, 217, 221
T. 20, R. 8 W., Milldale Coal Seam in 227, 228
T. 20, R. 8 W., Thompson Mill Coal Seam in 192
T. 20, R. 9 W., Brookwood Coal Seam in 228, 239, 240
T. 20, R. 9 W., Clements Coal Seam in 209
T. 20, R. 9 W., Guide Coal Seam in 241, 242
T. 20, R. 9 W., Gwin Coal Seam in 204
T. 20, R. 9 W., Johnson Coal Seam in 221 222
T. 20, R. 9 W, Milldale Coal Seam in 228
T. 20, R. 10 W., Gwin Coal Seam in 203
T. 21, R. 6 W., Black Creek Coal Seam in 8, 11
T. 21, R. 7 W., Black Creek Coal Seam in 11
T. 21, R. 7 W., Brookwood Coal Seam in 229
T. 21, R. 7 W., Clements Coal Seam in 208
T. 21, R. 7 W., Cobb Lower Coal Seam in 174
T. 21, R. 7 W., Cobb Upper Coal Seam in 178, 179
T. 21, R. W., Gwin Coal Seam 193, 194
T. 21, R. 7 W., Jefferson Coal Seam in 41
T. 21, R. 7 W., Johnson Coal Seam in 213
T. 21, R. 7 W., Pratt Coal Seam in 149
T. 21, R. 7 W., Thomas (Frierson) Coal Seam in 170
T. 21, R. 8 W., Brookwood Coal Seam in 229, 230, 235, 237
T. 21, R. 8 W., Clements Coal Seam in 207, 208, 209, 210
T. 21, R. 8 W., Guide Coal Seam in 241
T. 21, R. 8 W., Johnson Coal Seam in 212, 213, 214. 215, 218, 219
T. 21, R. 8 W., Milldale Coal Seam in 226, 227, 228
T. 21, R. 9 W., Brookwood Coal Seam in 235, 236, 237
T. 21, R. 9 W., Clements Coal Seam in 210, 211
T. 21, R. 9 W., Cobb Lower Coal Seam in 178
T. 21, R. 9 W., Cobb Upper Coal Seam in 181
T. 21, R. 9 W., Guide Coal Seam in 241
T. 21, R. 9 W., Gwin Coal Seam in 204
T. 21, R. 9 W., Johnson Coal Seam in 224 225
T. 21, R. 9 W., Thompson Mill Coal Seam in 193
T. 22, R. 7 W., Clements Coal Seam in 207
T. 22, R. 7 W., Milldale Coal Seam in 226
T. 22, R. 8 W., Brookwood Coal Seam in 229
T. 22, R. 8 W., Clements Coal Seam in 207
T. 22, R. 8 W., Johnson Coal Seam in 212
T. 22, R. 8 W., Milldale Coal Seam in 225
Tupelo Drifts 52
Turner old Mine, Palos No. 1 103
Tuscalossa Coal, Iron and Land Co., quoted 245, 248, 247
Tuscaloosa, drilling near 243
Tutwiler, Maj. E. M., quoted 271

Uses, coal 6
University Coal Seam, see Brookwood Coal Seam.
Uutley Drift 190

Van Hoose Lower Drift........ 158
Van Hoose Upper Drift 158
Vitrified bricks 7
Vulcan (Tennessee) Slope 98, 99

Warrior Coal Basin 1, 2
Warrior Coal Field..... .... 2, 5
Warrior Coal Seam, Black Creek and Jefferson united 20
Warrior drilling 265, 266
Warrior Shaft 46, 266
Water-power 7
Watts (Fidelity) Mines (Drifts).................. 47
Wheeling Slopes 133
Wheelock Coal Seam, see Milldale Coal Seam.
Wildsmith Coal Seam, see Clements Coal Seam.
Widsmith Mine (Slope) 208
Willoughby, Jno. B., quoted 30
Wilmington (old), coal around.................. 180
Wilson Coal Bed 36
Wolf Den Hollow Mines (Drifts)................ 19
Workable coals 1, 5

York Coal Bed 25